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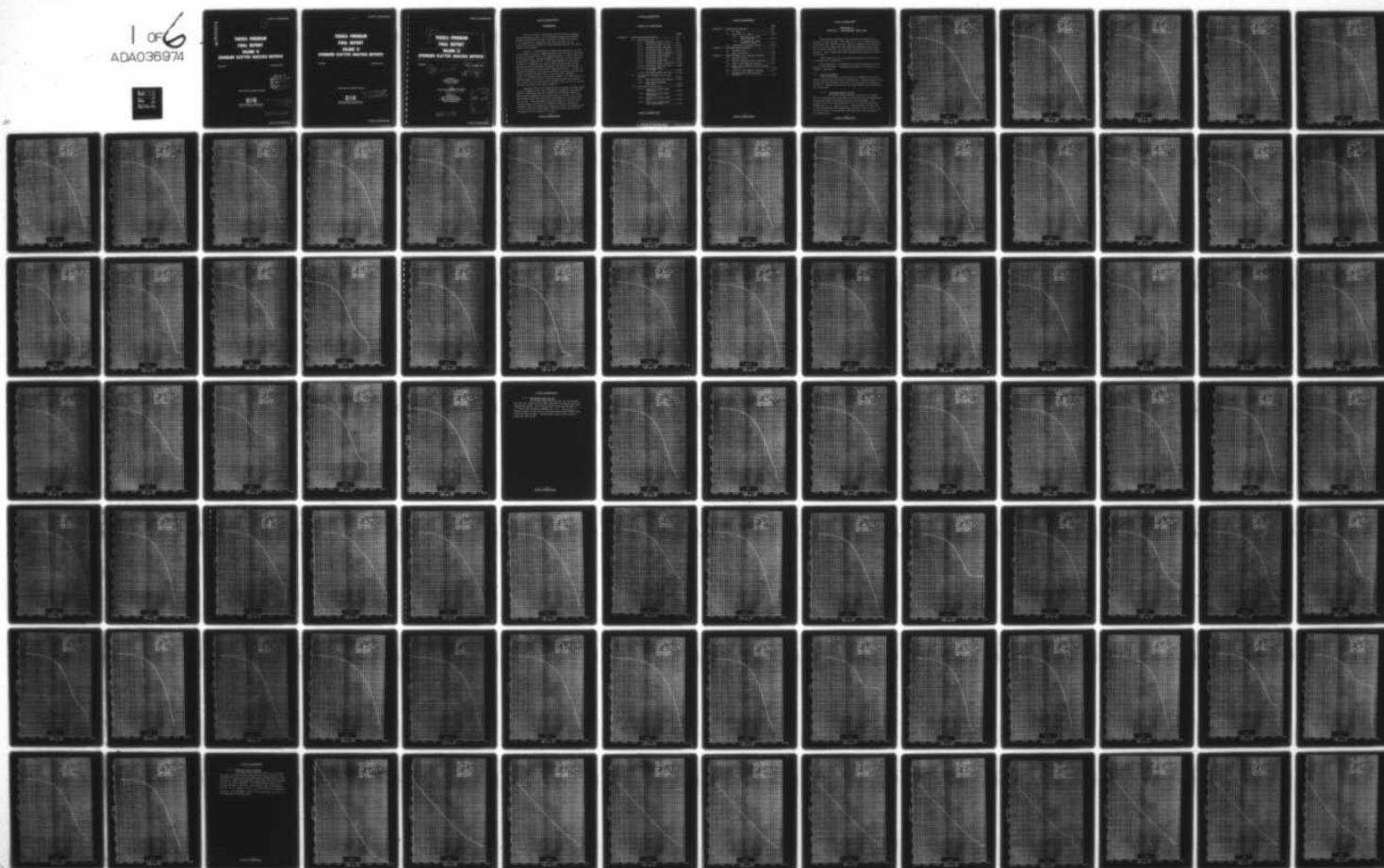
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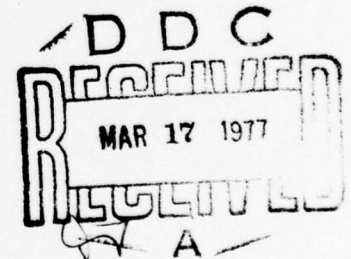
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**TAGSEA PROGRAM
FINAL REPORT
VOLUME IV
STANDARD CLUTTER ANALYSIS OUTPUTS**

BR-9254-4

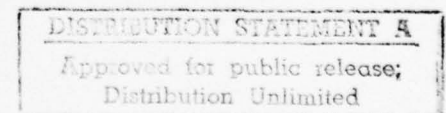
27 AUGUST 1976



Prime Contract No. N00017-73-C-2244



RAYTHEON COMPANY
MISSILE SYSTEMS DIVISION



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FINAL REPORT
VOLUME IV
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27 AUGUST 1976

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RAYTHEON COMPANY
MISSILE SYSTEMS DIVISION

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Pomona, California
D.V.

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Prepared By
RAYTHEON COMPANY
MISSILE SYSTEMS DIVISION
Bedford, Massachusetts

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FOREWORD

This final report summarizes the work done by Raytheon Missile Systems Division for the TAGSEA Program under General Dynamics PO #304490-PB, prime contract no. N00017-73-C-2244. It is submitted in compliance with Data Item A015 and is organized into four volumes to ease handling and for the convenience of the readers.

Volume I, Clutter Models, reports the essence of the work and contains the models themselves which were the prime objective of the clutter portion of the TAGSEA program; it can be read on a stand-alone basis. Enough peripheral material is also included to provide a framework for a good understanding of the models. Volume II, Procedures and Output Forms, provides details and explanations on methodology including the form of the outputs and the structures of the clutter simulation effort. Volume III, Supportive Analyses and Outputs, provides analytical back-up and a more complete detailed view of the simulation software. Volume IV, Standard Clutter Analysis Outputs, is a compilation in various forms of the mass of data analyzed during the program. Each volume has its own table of contents which serves to outline the specific material presented therein.

Raytheon wishes to acknowledge the valuable aid and support given by members of the team composed of personnel from NAVSEA, APL/JHU, Technology Service Corporation and General Dynamics. Many helpful suggestions were made during a series of critiques and reviews which most assuredly contributed to a better resultant output. The assistance received ranged all the way from general support and overall guidance to specific supportive analyses, detailed unpublished comparative data, and suggestions of exact forms of clutter models and plots which would be most informative to the community at large.

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APPENDIX G OUTPUTS - HISTOGRAM ANALYSIS

Both plotted histograms and statistical parameters are included in this section. The plots of 1.1 are in many different forms which are simply different ways of presenting the same data. The first three subsections are presented completely since they are in such a form that all pertinent information can be gleaned directly. Other subsections show representative plots for details of the data.

Mean normalized and raw histogram statistics are presented in tabular form in Section 1.2.

Each subsection is preceeded by a short description of the material which follows. A complete description is contained in Volume II, Section 9.

1.1 Total Histograms

Each of the plots in this section is marked as to run and flight, nominal wind direction and sea state. Detailed descriptions of the form and meaning of the plots will be found in Volume II, Section 9. Summary descriptions are placed before each subsection for convenience.

1.1.1 Histograms TOTAL A LOG Q

All valid clutter data for each run is included. The (A) indicates the histograms of each range gate are normalized by the mean before combining into the total histogram. The vertical axis is the logarithm base 10 of 1 minus the cumulative probability, i.e., $\text{LOG}_{10} (1-P_{(x)})$. Various points on the tail of the distribution are clearly read from this type of plot. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

LOG(Q)

TOTAL-R

RUN 1 ELT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3

LOG Q(X)

G-2

AMP/MN DB

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-10.00

-6.00

-2.00

2.00

6.00

10.00

14.00

18.00

LOG(Q)

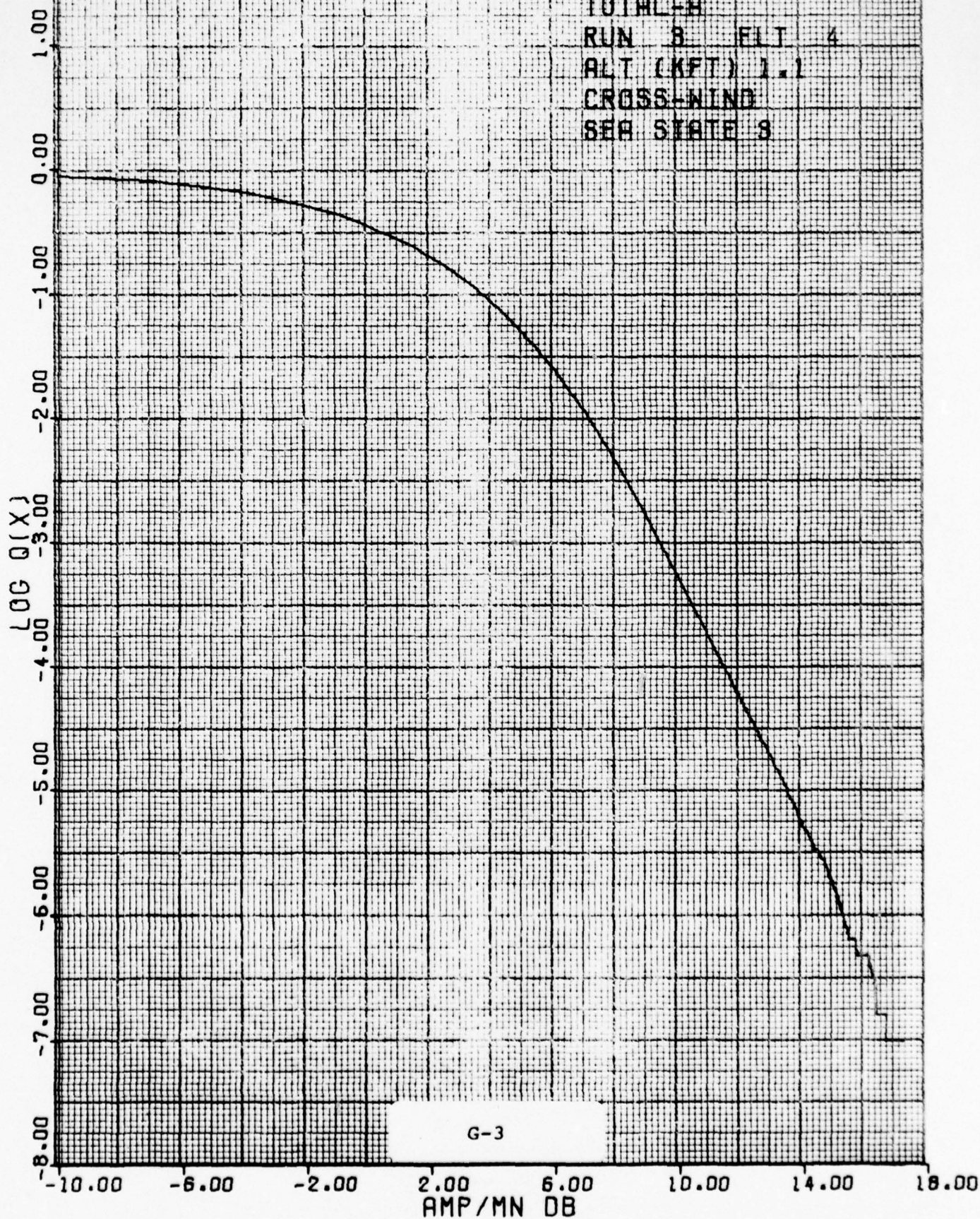
TOTAL-R

RUN 8 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



LOG(Q)

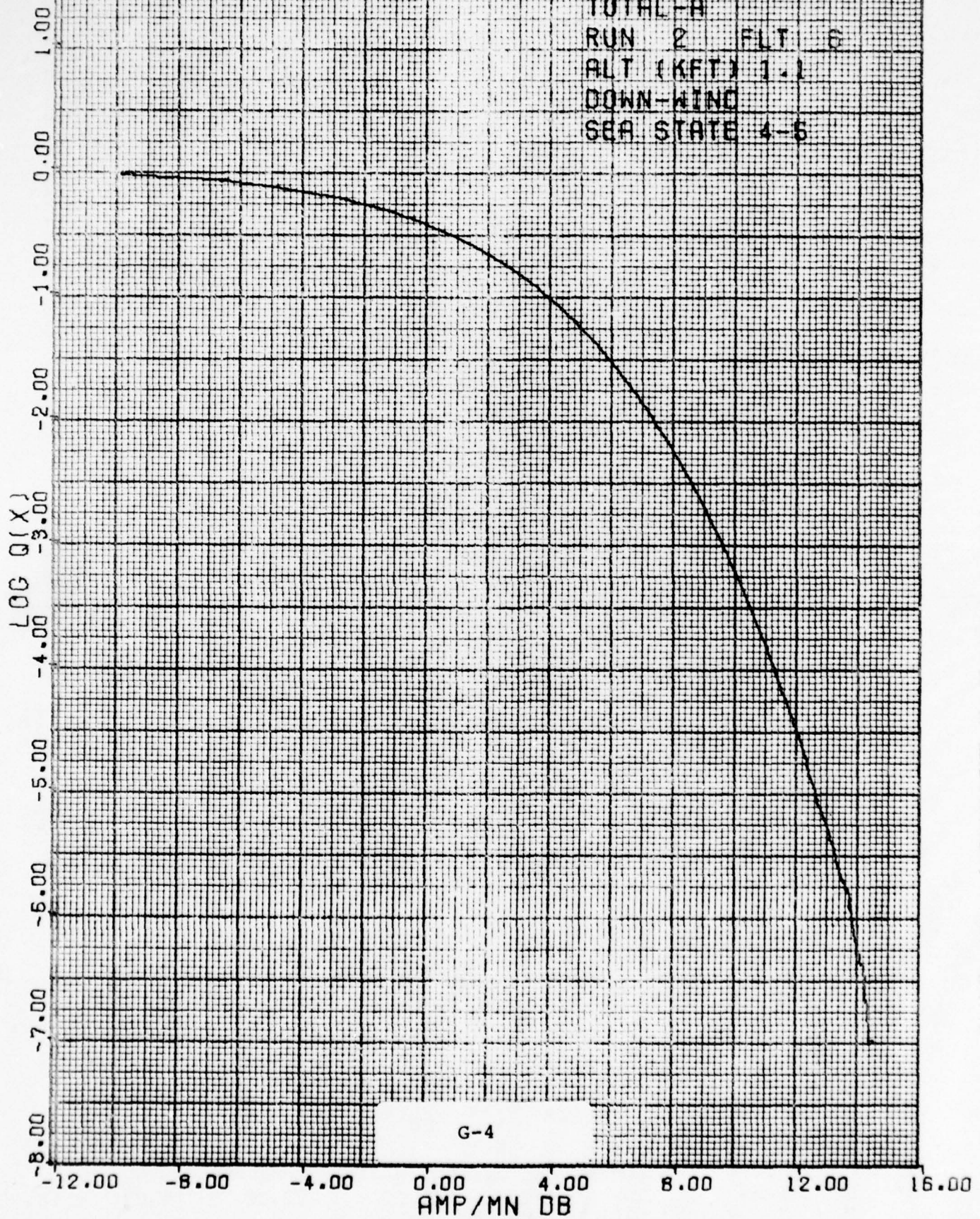
TOTAL-A

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5



LOG(Q)

TOTAL-A

RUN 3 FLT 6

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4-5

LOG Q(X)

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

G-5

-12.00

-8.00

-4.00

0.00

4.00

8.00

12.00

16.00

AMP/MN DB

LOG(Q)

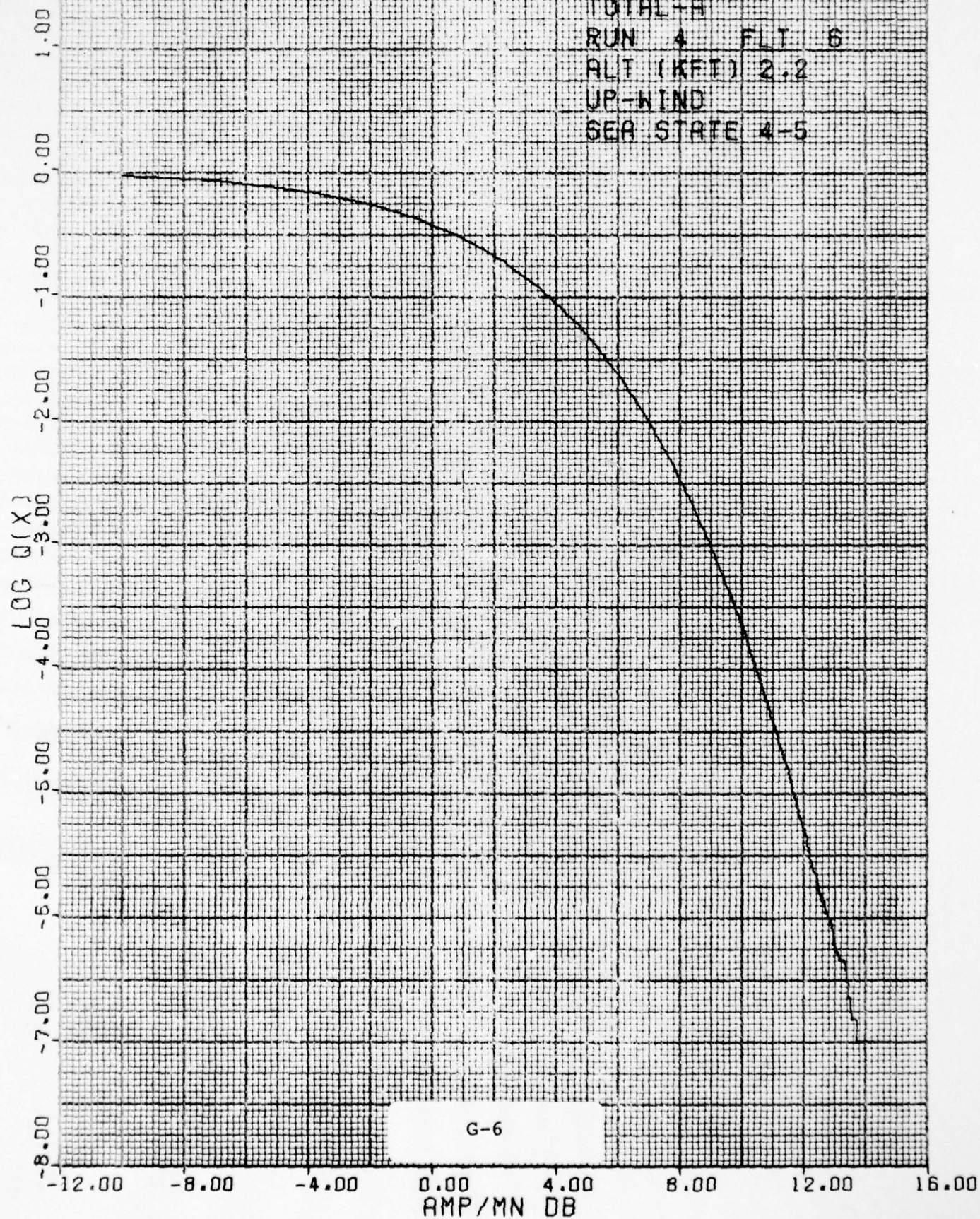
TOTAL-A

RUN 4 FLT 6

ALT (KFT) 2.2

UP-WIND

SEA STATE 4-5



LOG(Q)

TOTAL-R

RUN 5 FLT 6

ALT (KFT) 2.2

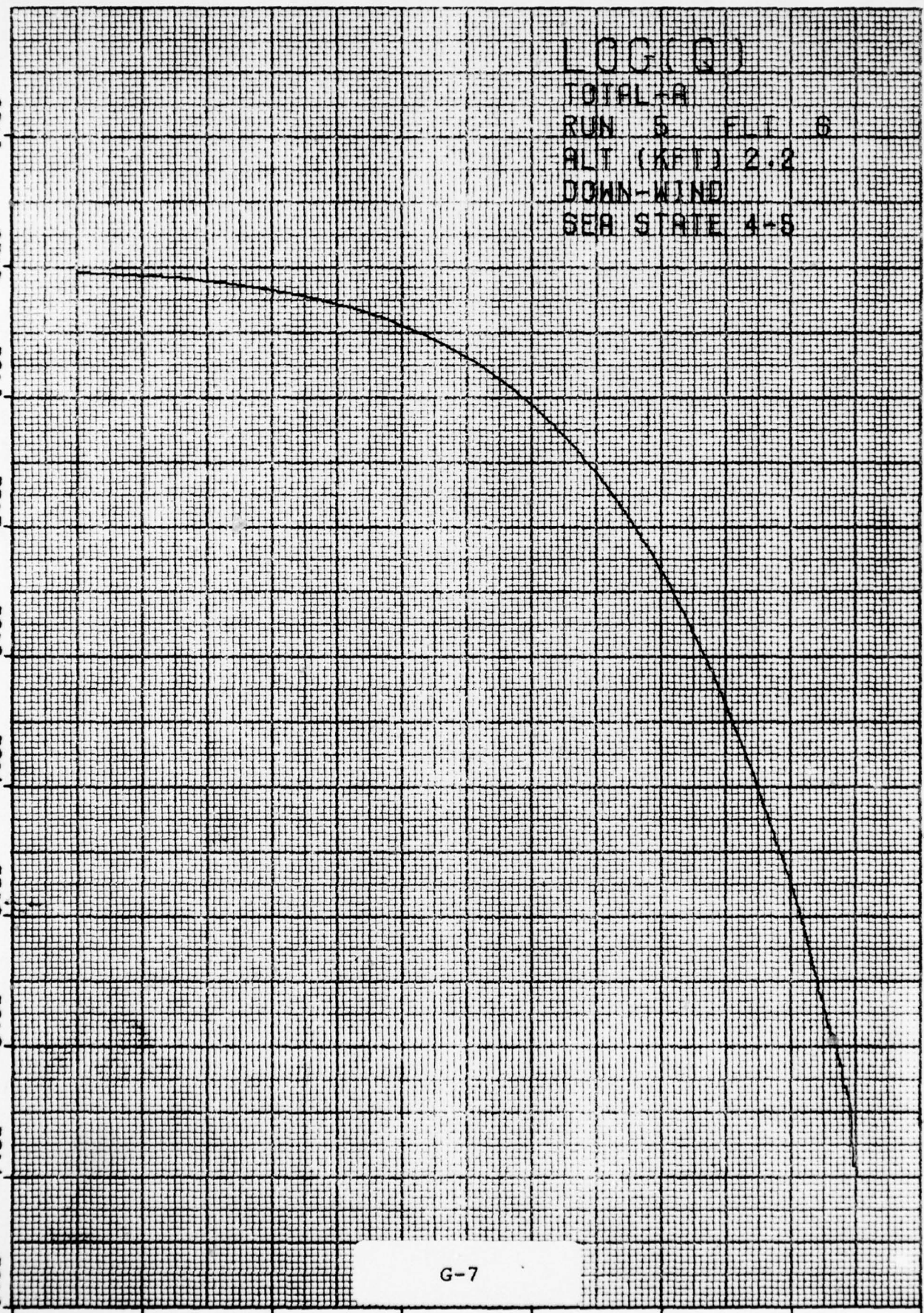
DOWN-WIND

SEA STATE 4-5

LOG Q(X)
1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

AMP/MN DB
-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00

G-7



LOG(Q)

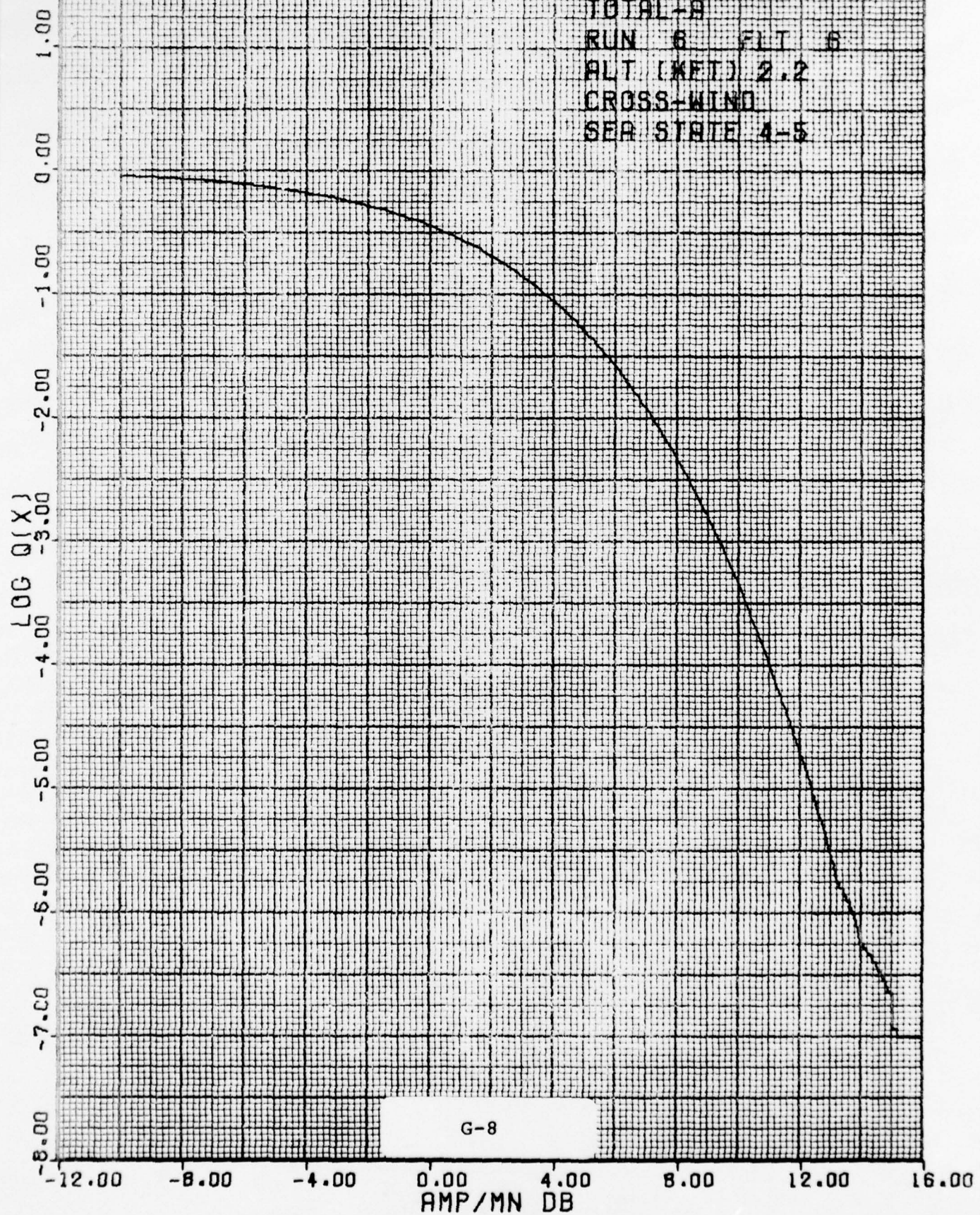
TOTAL-A

RUN 6 FLT 6

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4-5



G-8

LOG(Q)

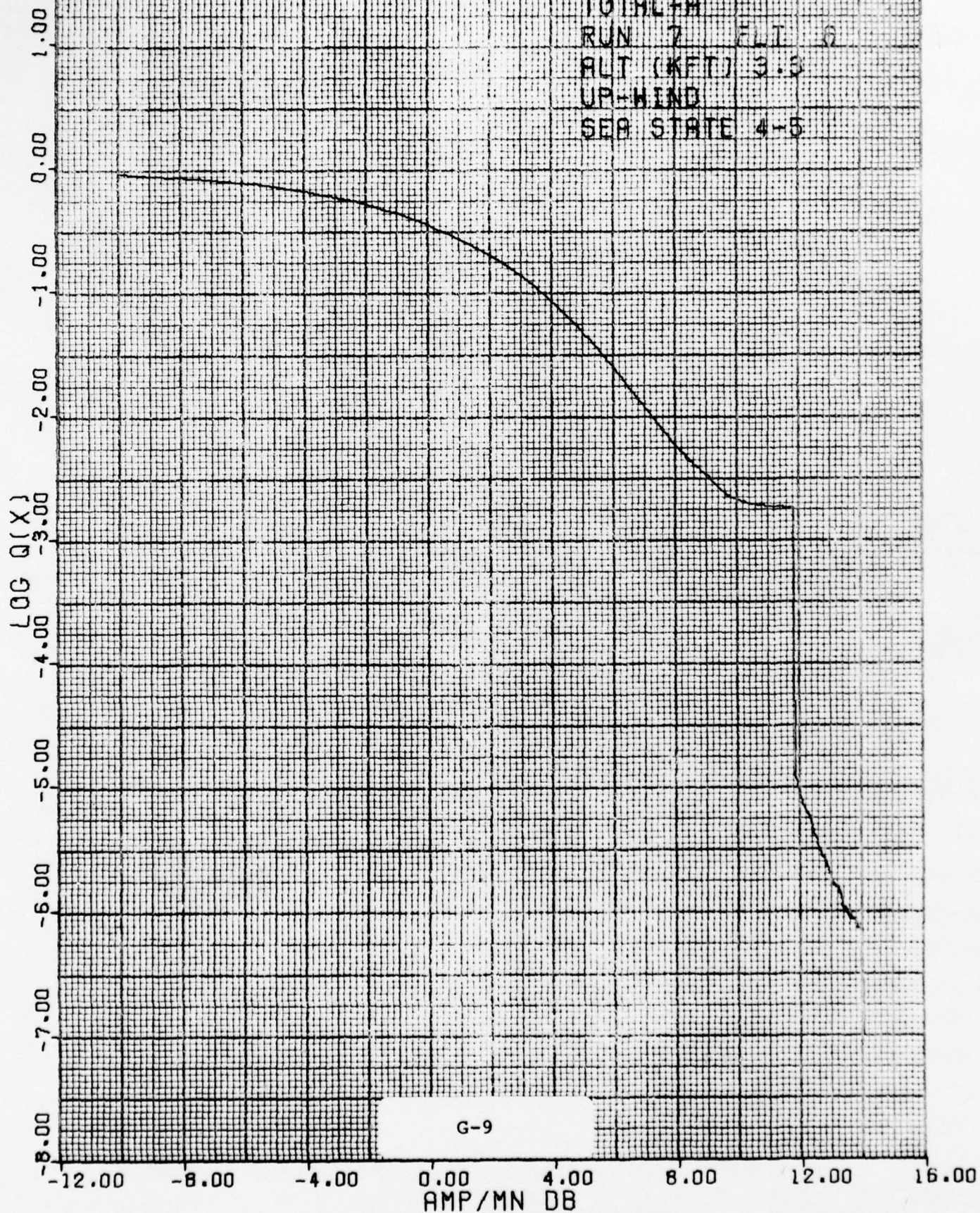
TOTAL-R

RUN 7 FLT 6

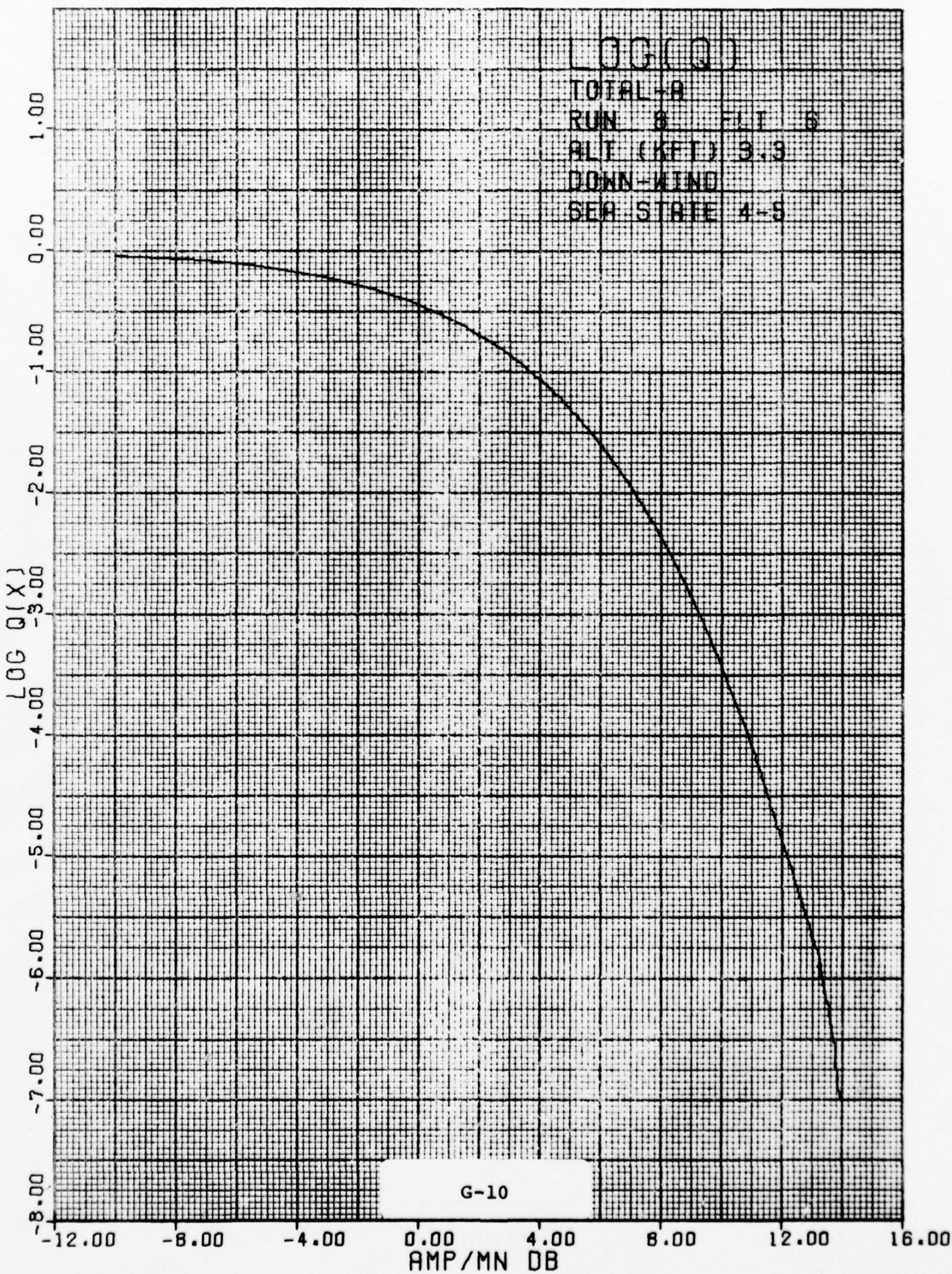
ALT (KFT) 3.3

UP-WIND

SEA STATE 4-5



G-9



LOG(Q)

TOTAL-A

RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5

LOG Q(X)

G-11

AMP/MN OR

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00

LOG(Q)

TOTAL-A

RUN 1 ELI 7

ALT (KFT) 1.1

UP-WIND

SEA STATE 5

LOG Q(X)

G-12

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-10.00 -5.00 0.00 5.00 10.00 15.00 20.00 25.00

LOG(Q)

TOTAL-A

RUN 2 FLT 7

ALT (KFT) 3.1

DOWN-WIND

SEA STATE 5

LOG Q(X)

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-10.00

-5.00

0.00

5.00

10.00

15.00

20.00

25.00

AMP/MN DB

G-13

LOG(Q)

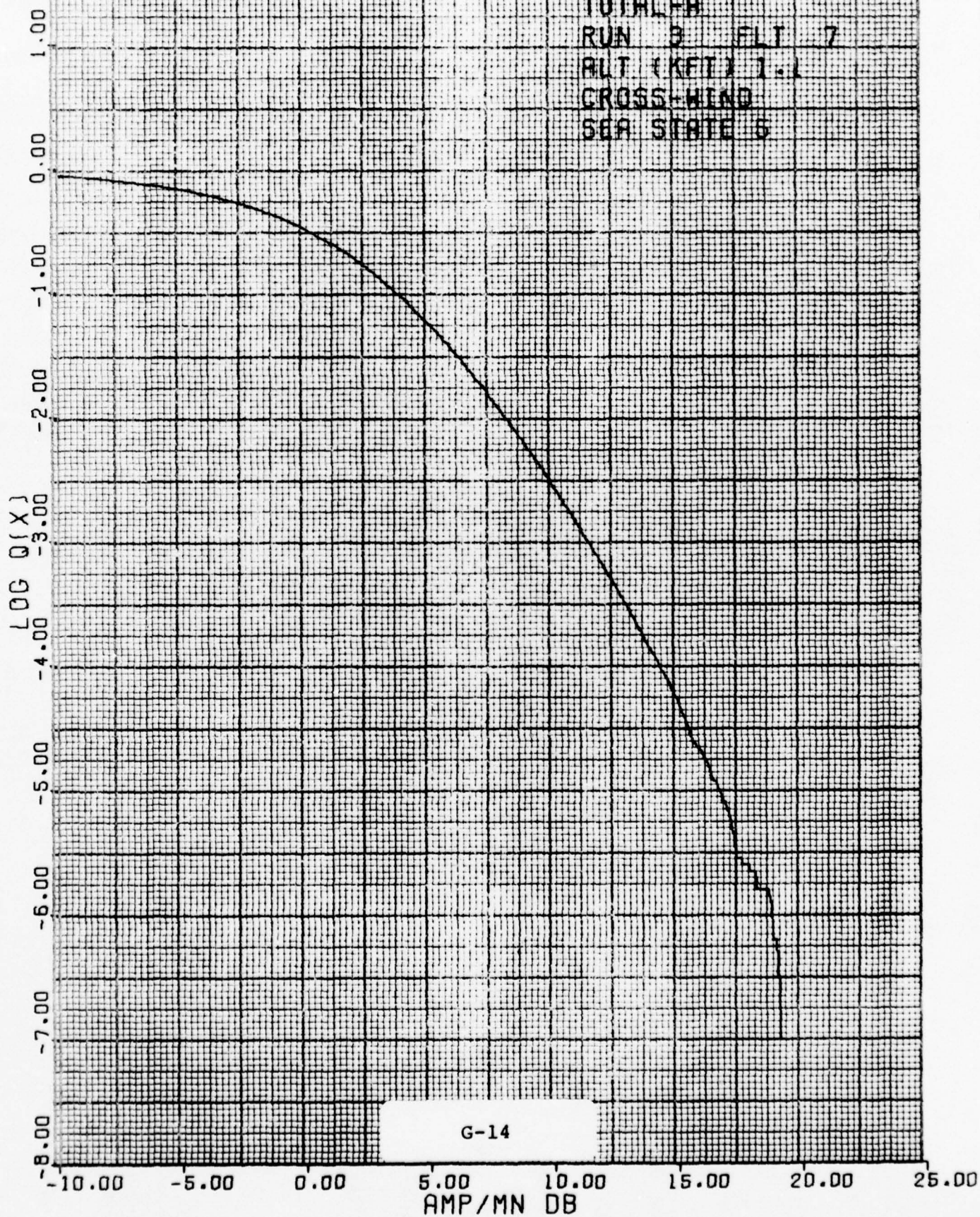
TOTAL-B

RUN 3 FLT 7

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 5



G-14

LOG(Q)

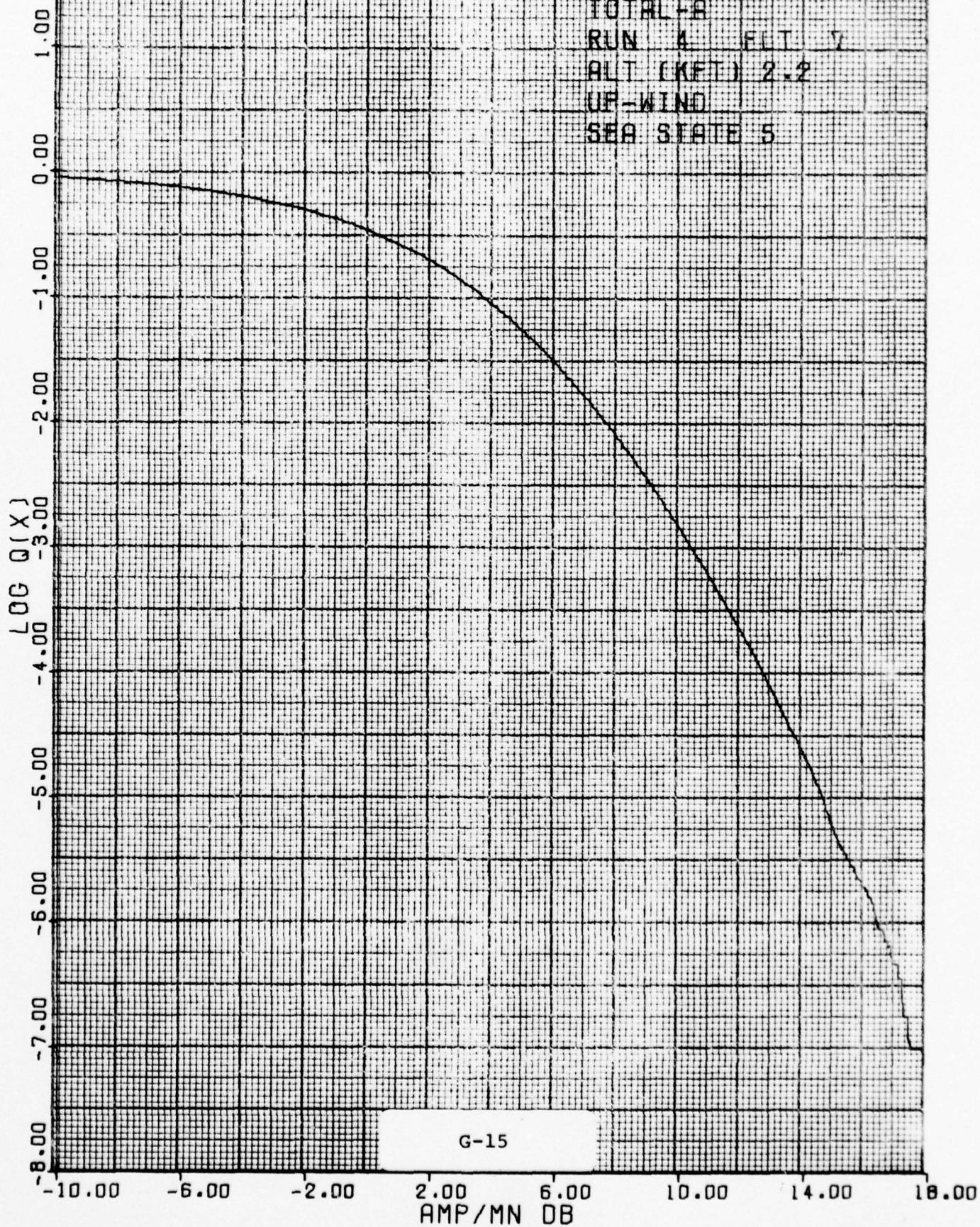
TOTAL-R

RUN 4 FLT 7

ALT (KFT) 2.2

UP-WIND

SEA STATE 5



LOG(Q)

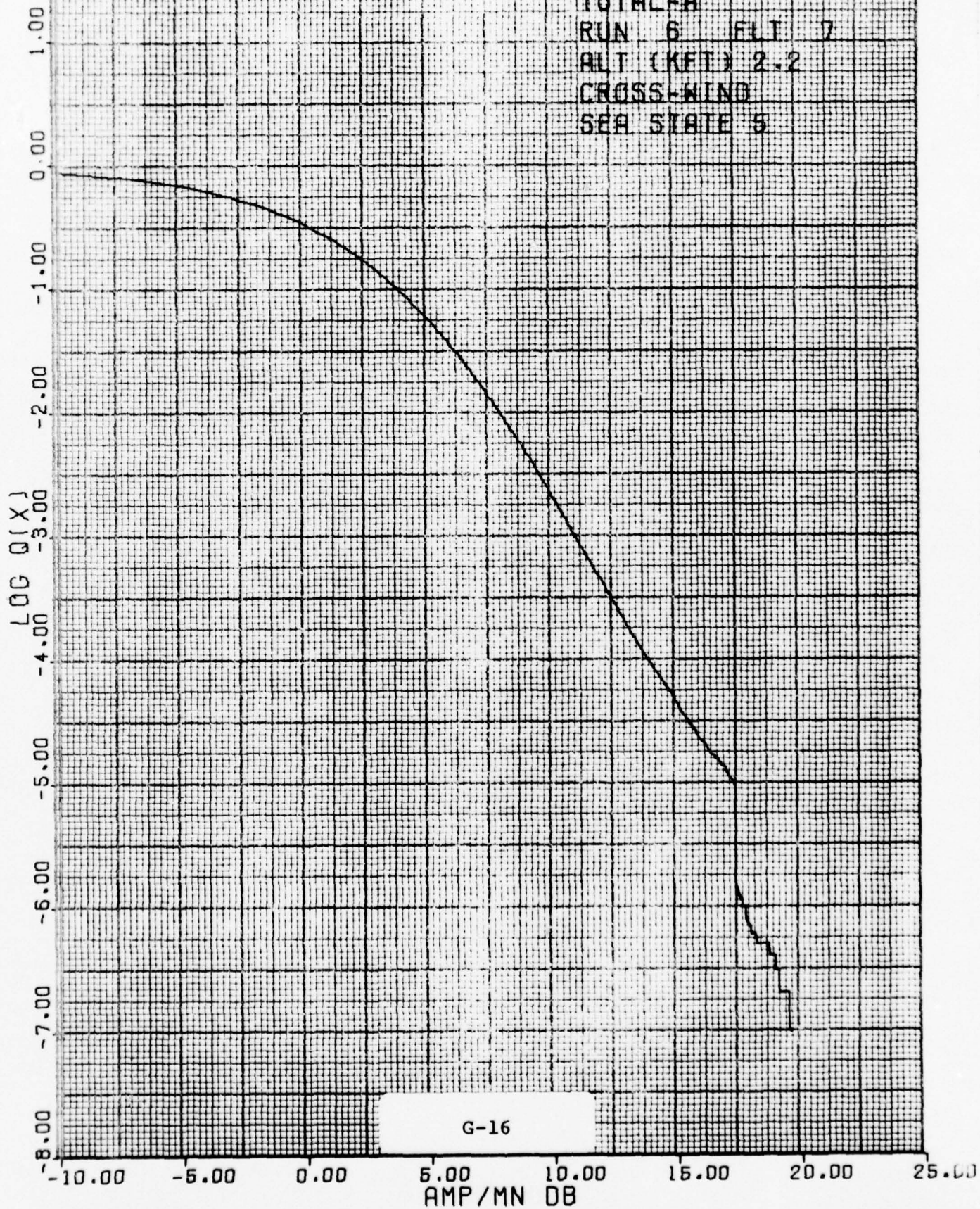
TOTAL-A

RUN 6 FLT 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5



LOG(Q)

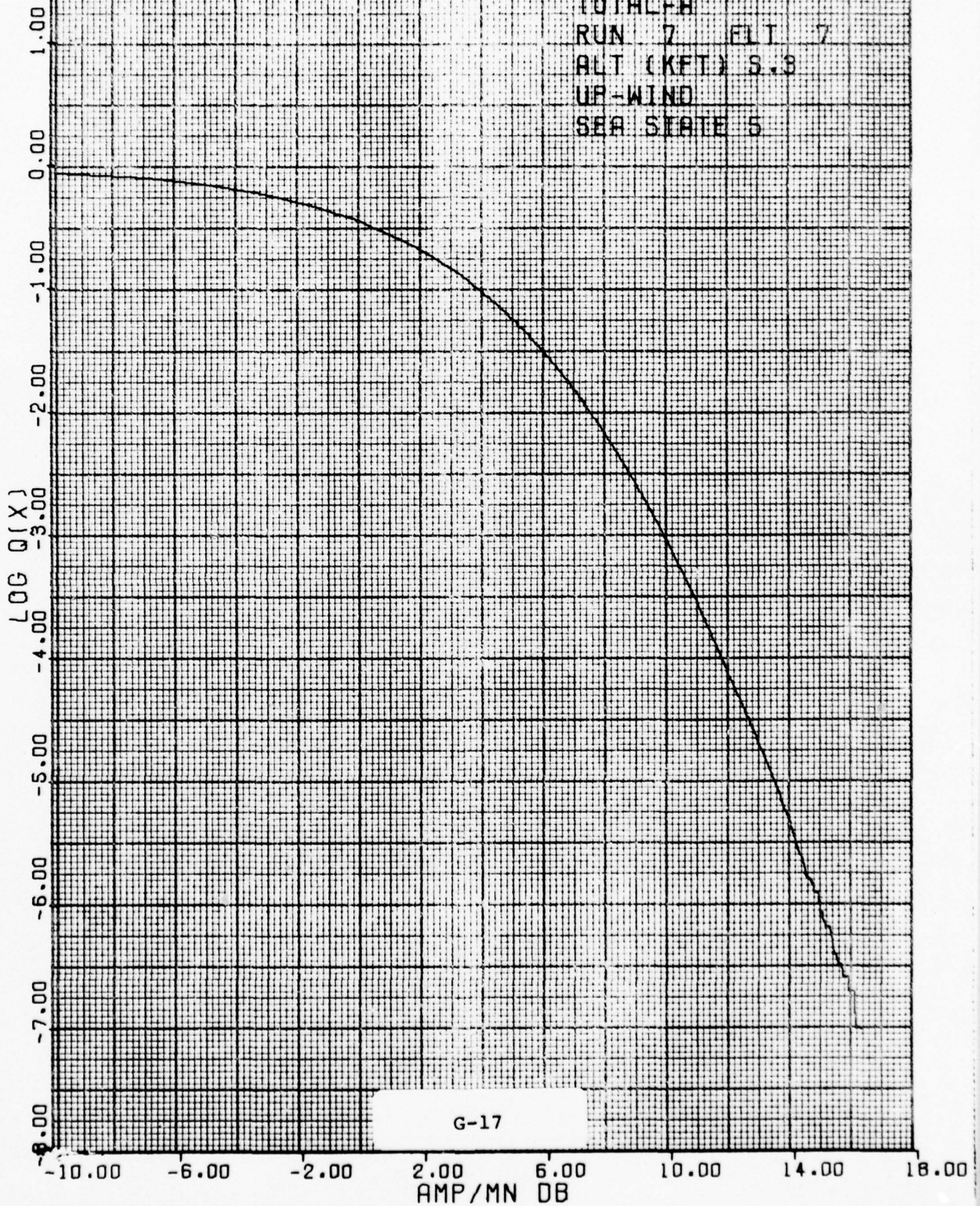
TOTAL-A

RUN 7 FLT 7

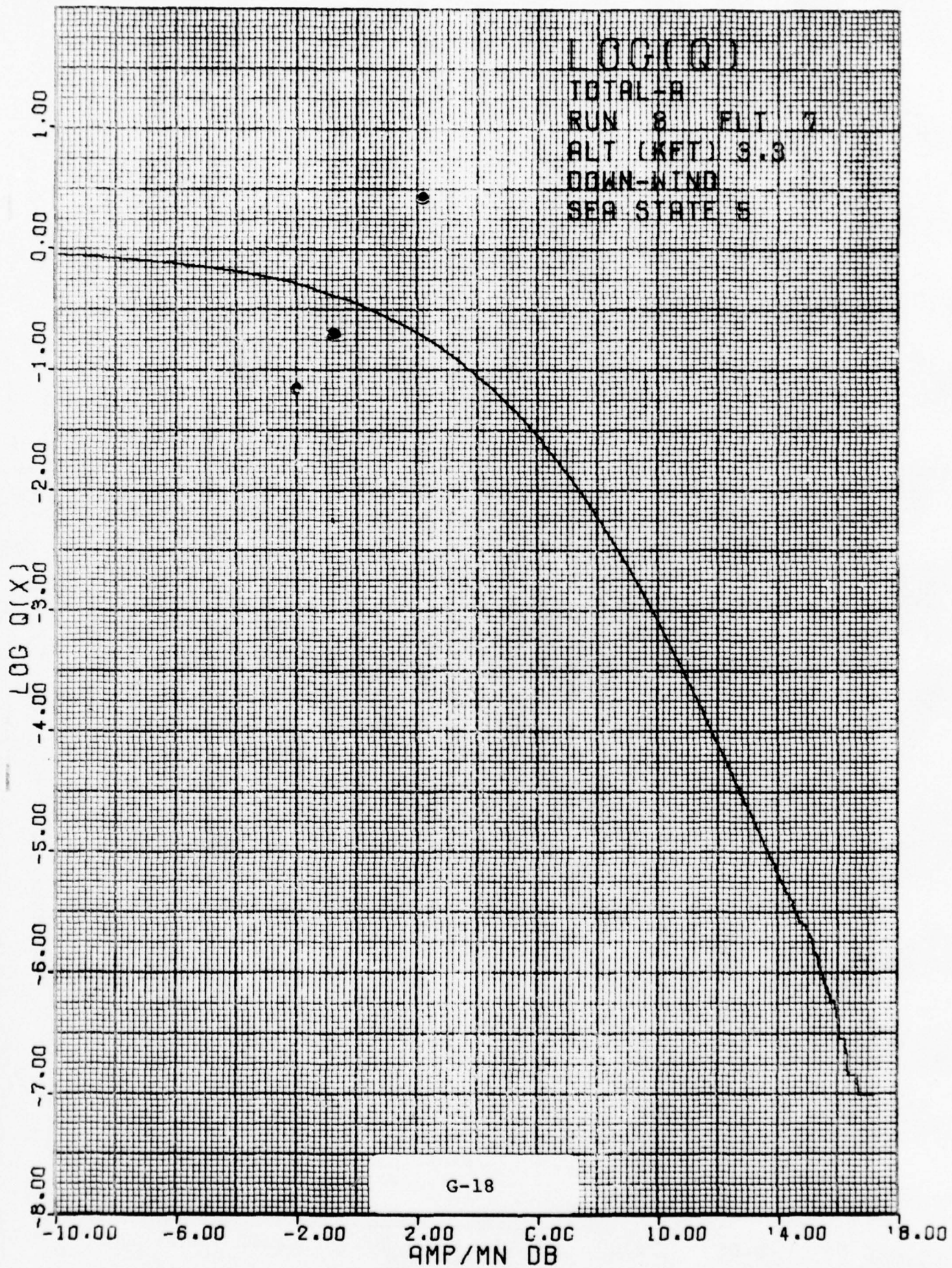
ALT (KFT) 5.3

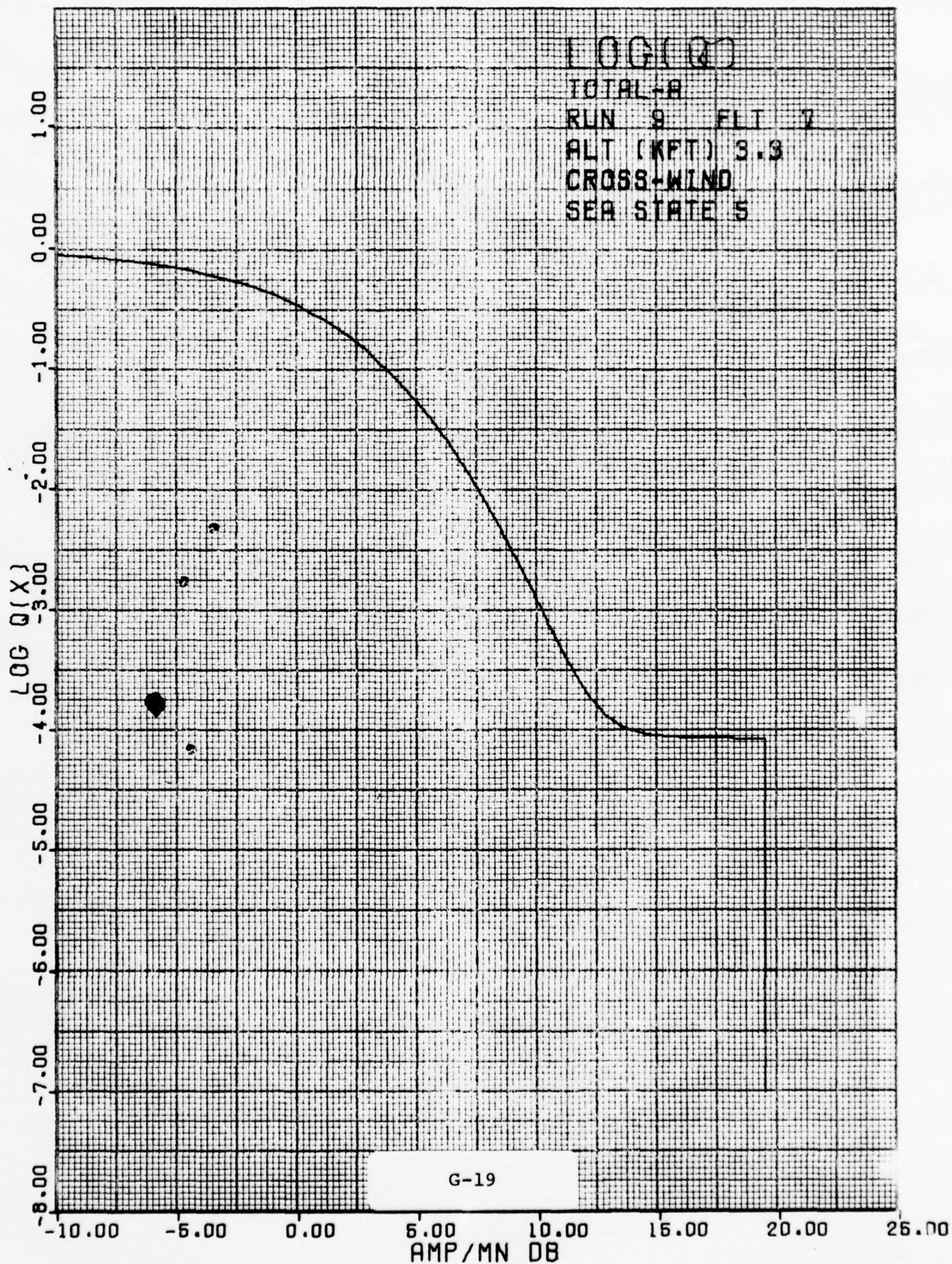
UP-WIND

SEA STATE 5



G-17





LOG(Q)

TOTAL-A

RUN 1 FLT 8

ALT (KFT) 0.5

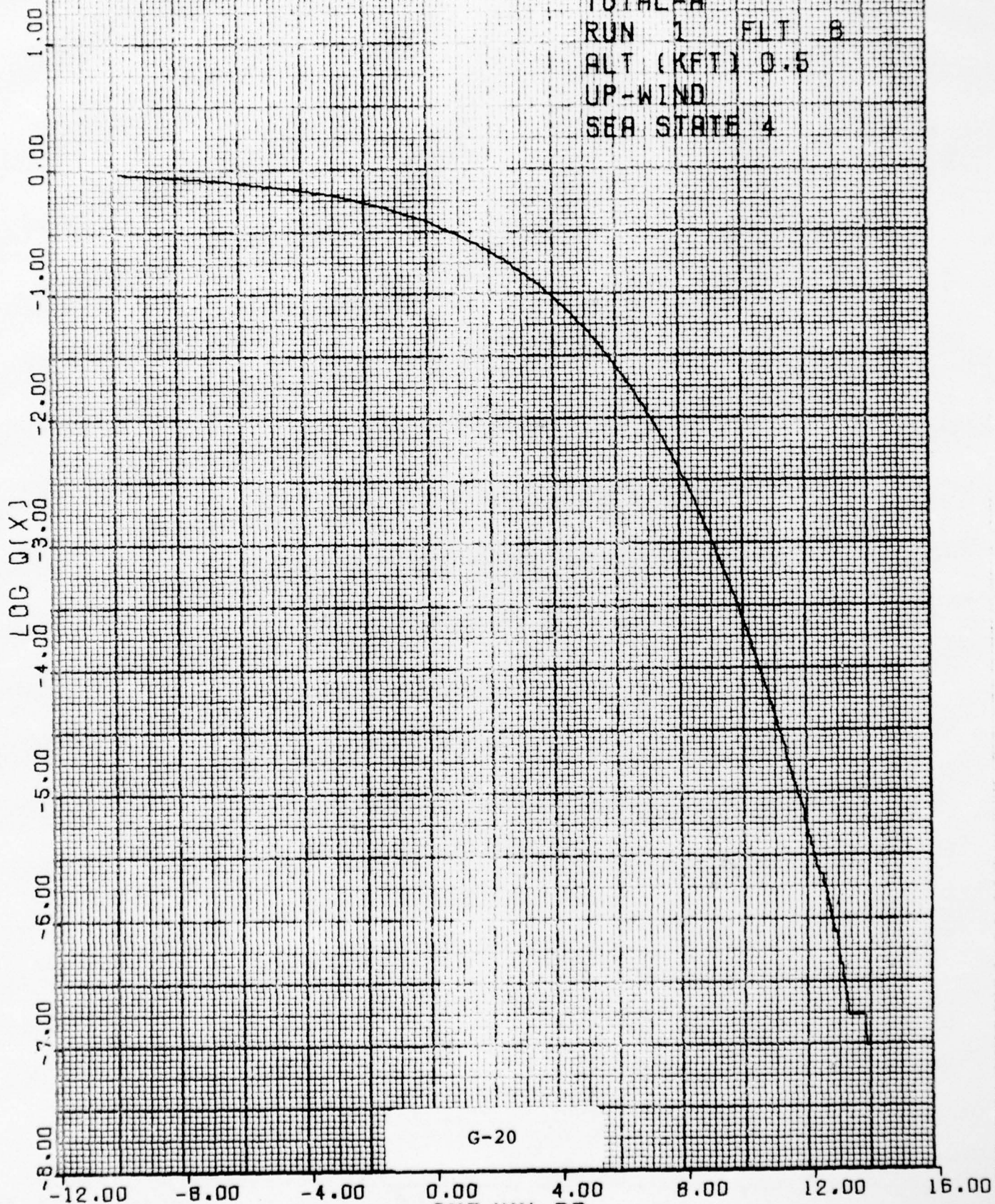
UP-WIND

SEA STATE 4

LOG Q(X)

G-20

AMP/MN DB



LOG(Q)

TOTAL-R

RUN 2 FLT 8

ALT (KFT) 0.5

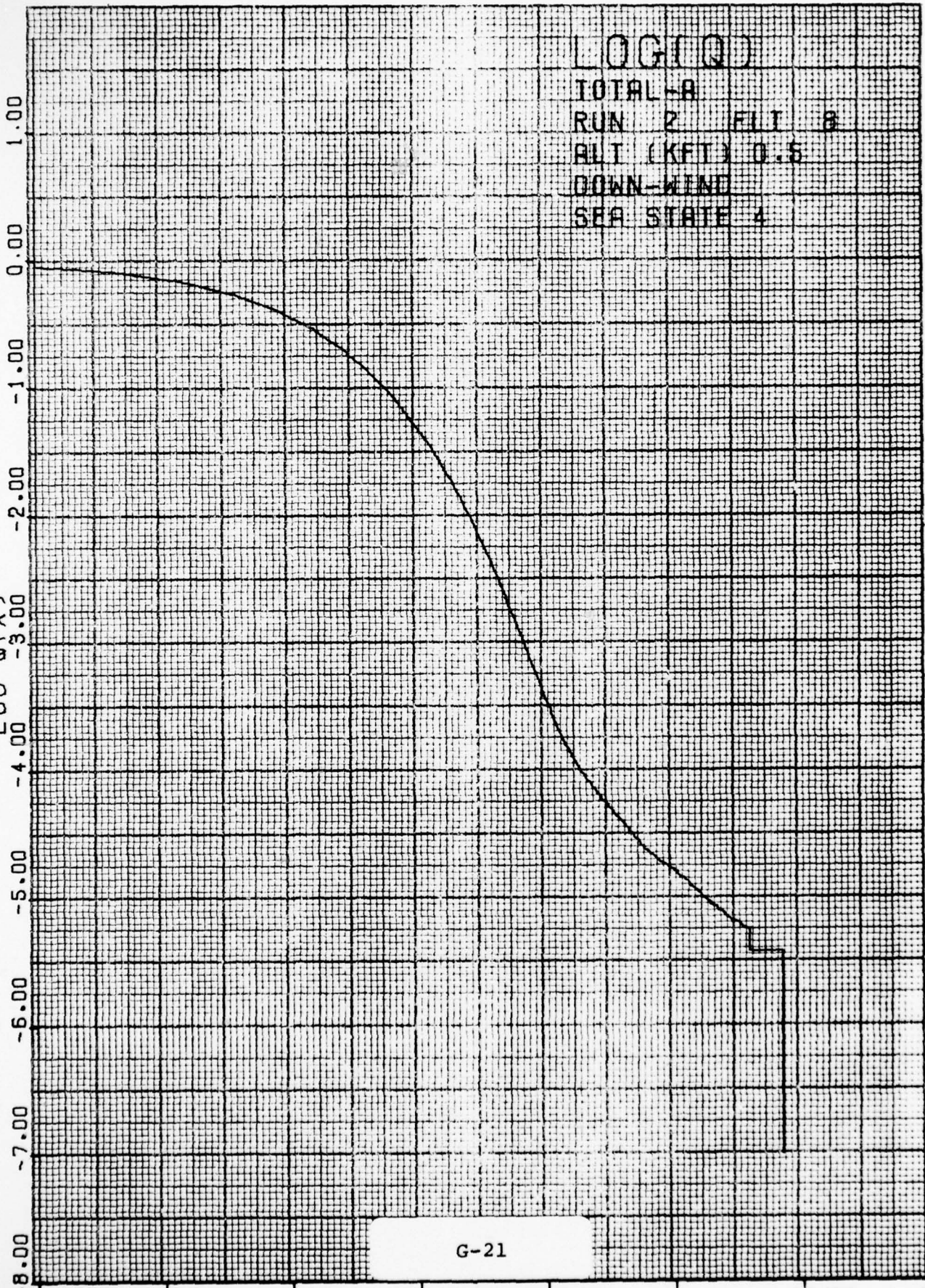
DOWN-WIND

SEA STATE 4

LOG Q(X)
1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

G-21

AMP/MN DB
-10.00 -6.00 0.00 5.00 10.00 15.00 20.00 25.00



LOG(Q)

TOTAL-B

RUN 3 FLT 8

ALT (KFT) 0.5

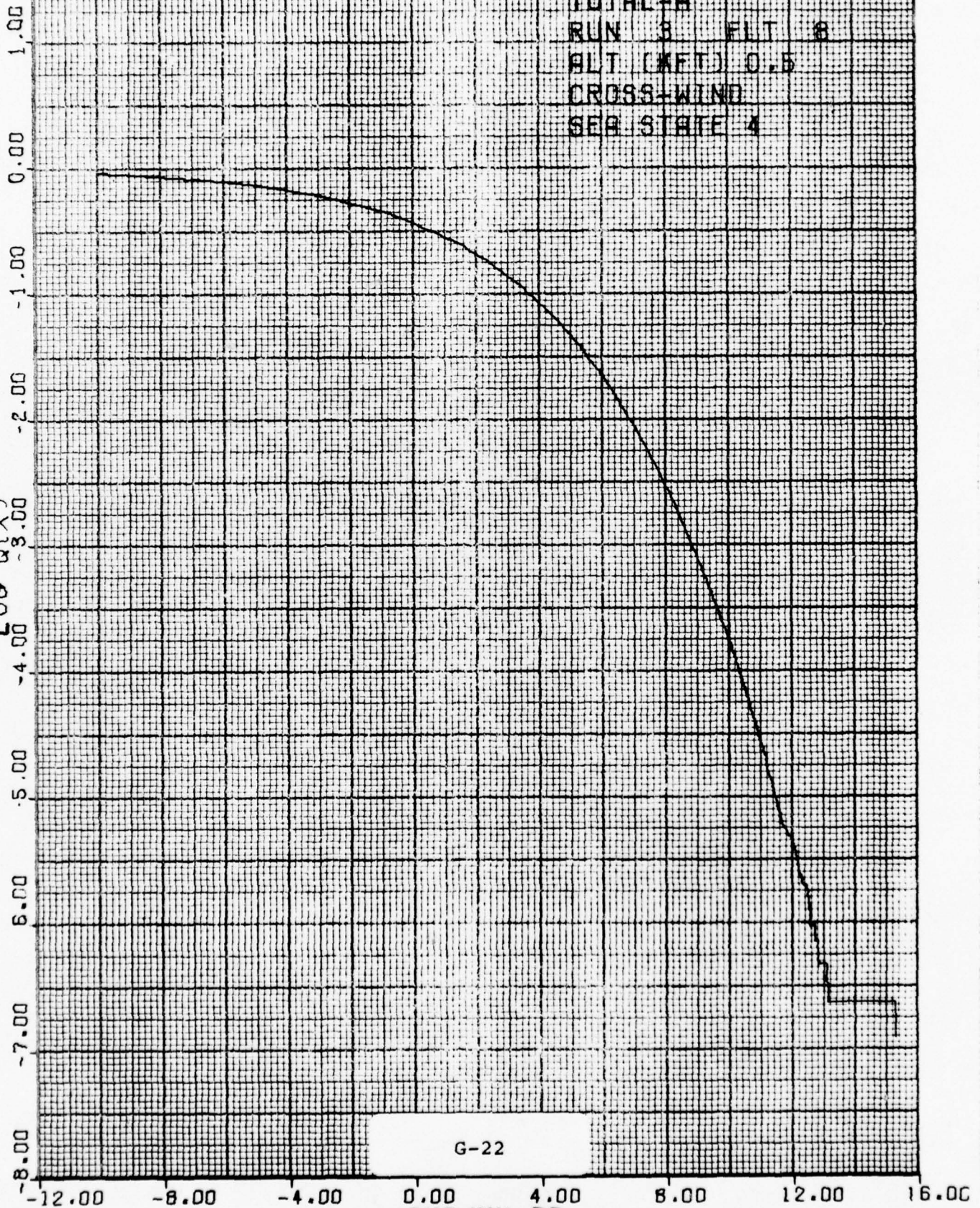
CROSS-WIND

SEA STATE 4

LOG Q(X)

G-22

AMP/MN DB



LOG(Q)

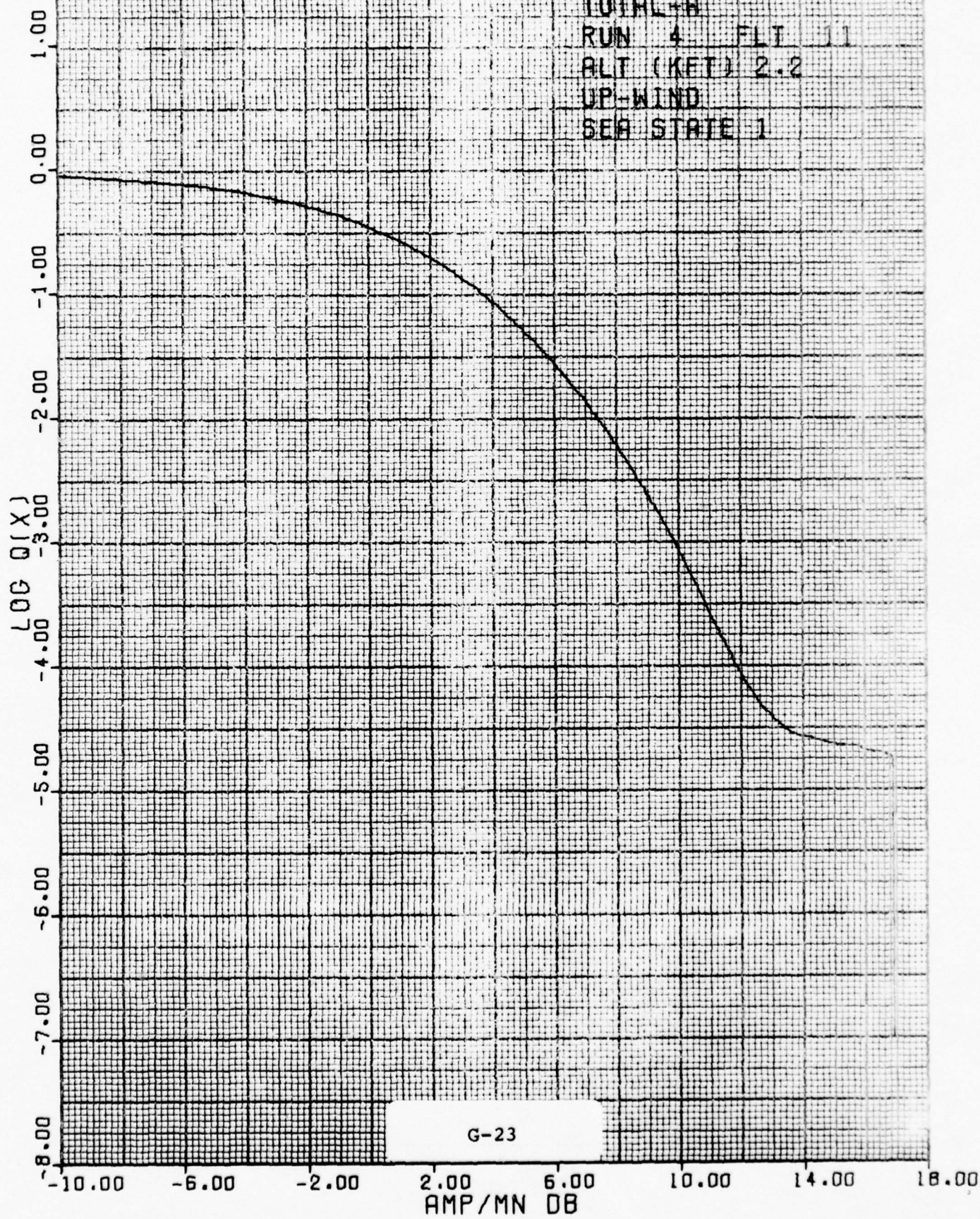
TOTAL-R

RUN 4 FLT 11

ALT (KET) 2.2

UP-WIND

SEA STATE 1



G-23

LOG(Q)

TOTAL - A

RUN 5 FLT 11

ALT (KFT) 2.2

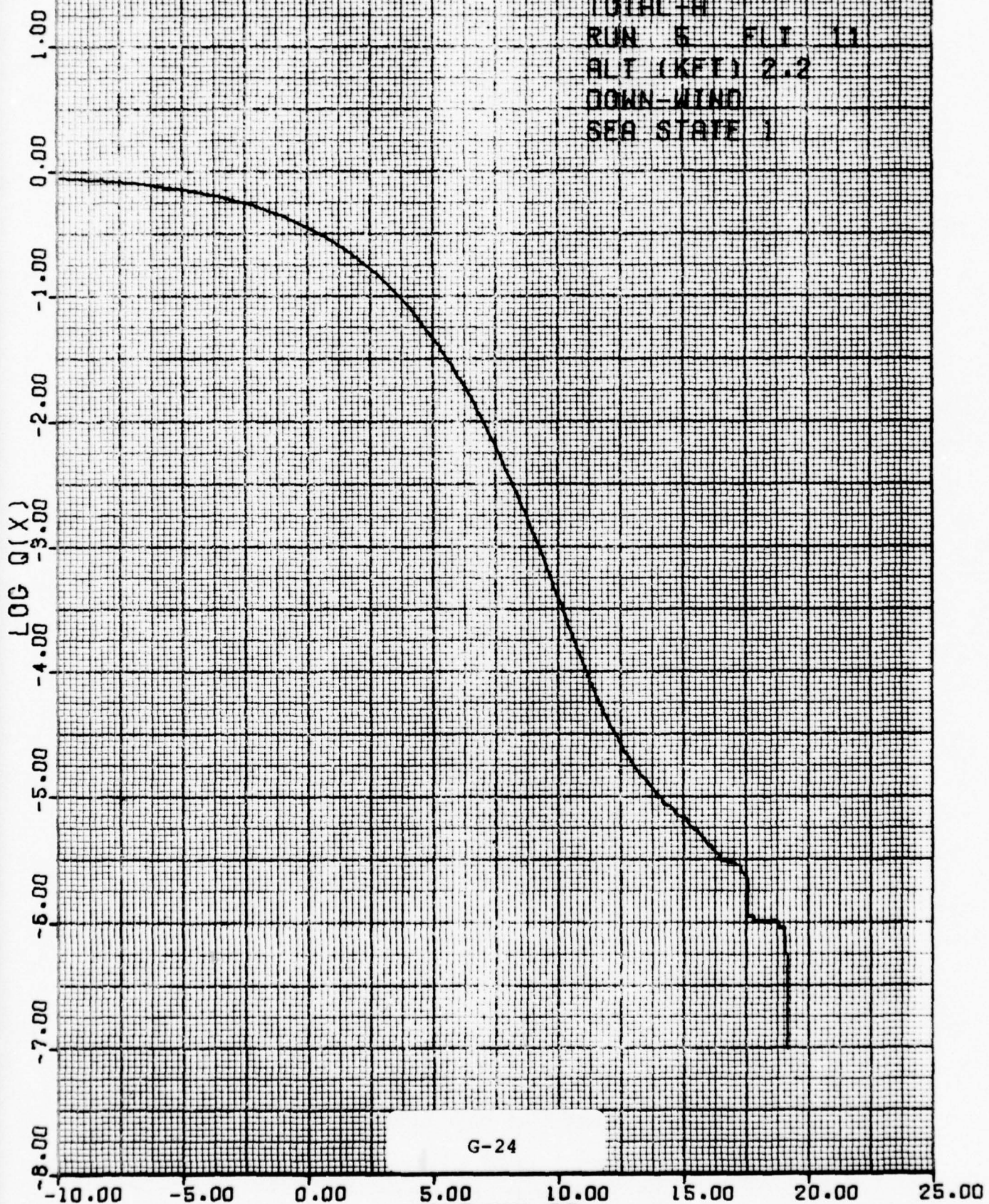
DOWN-WIND

SEA STATE 1

LOG Q(X)

G-24

AMP/MN DB



LOG(Q)

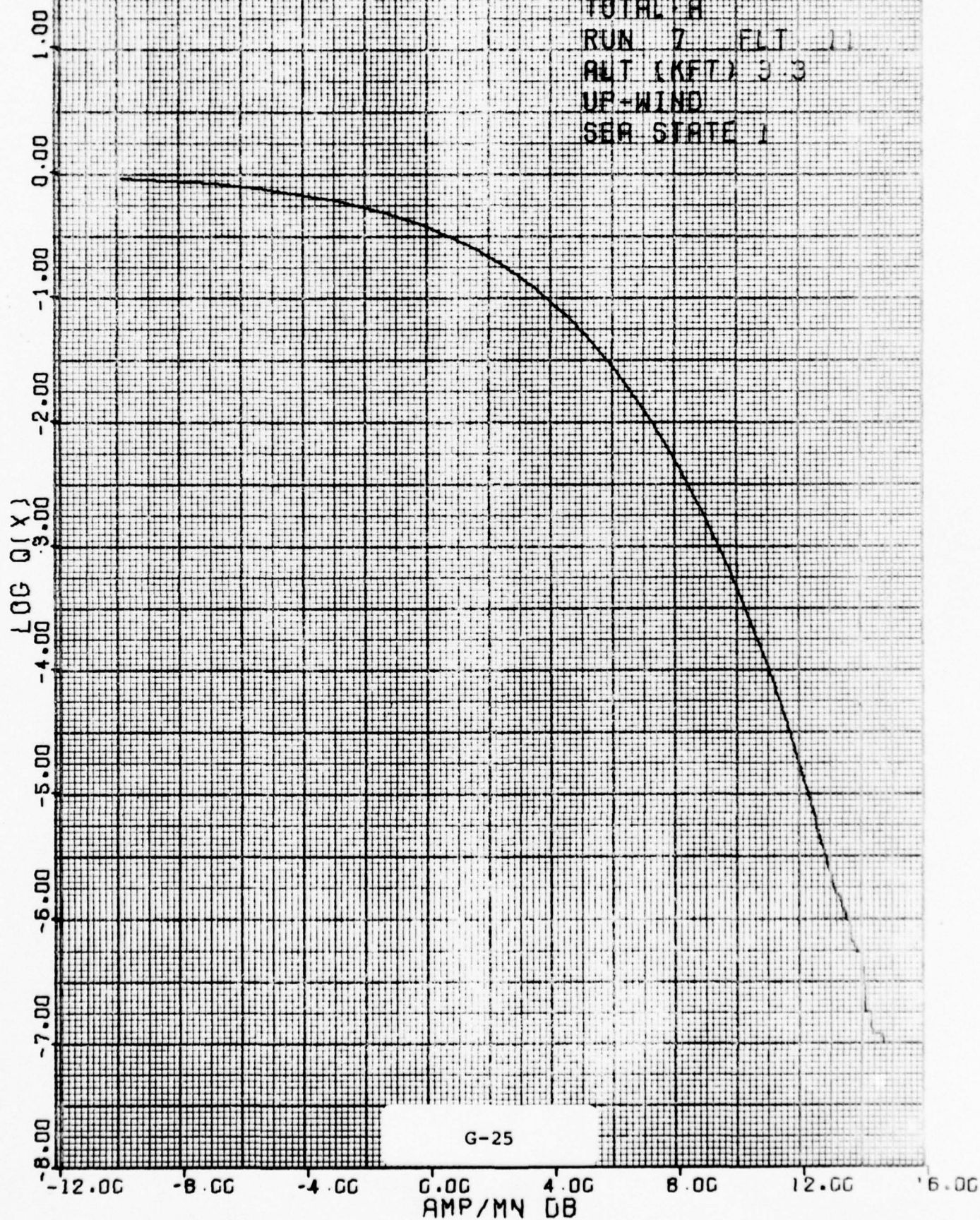
TOTAL R

RUN 7 FLT 11

ALT (KFT) 33

UP-WIND

SEA STATE 1



G-25

LOG(Q)

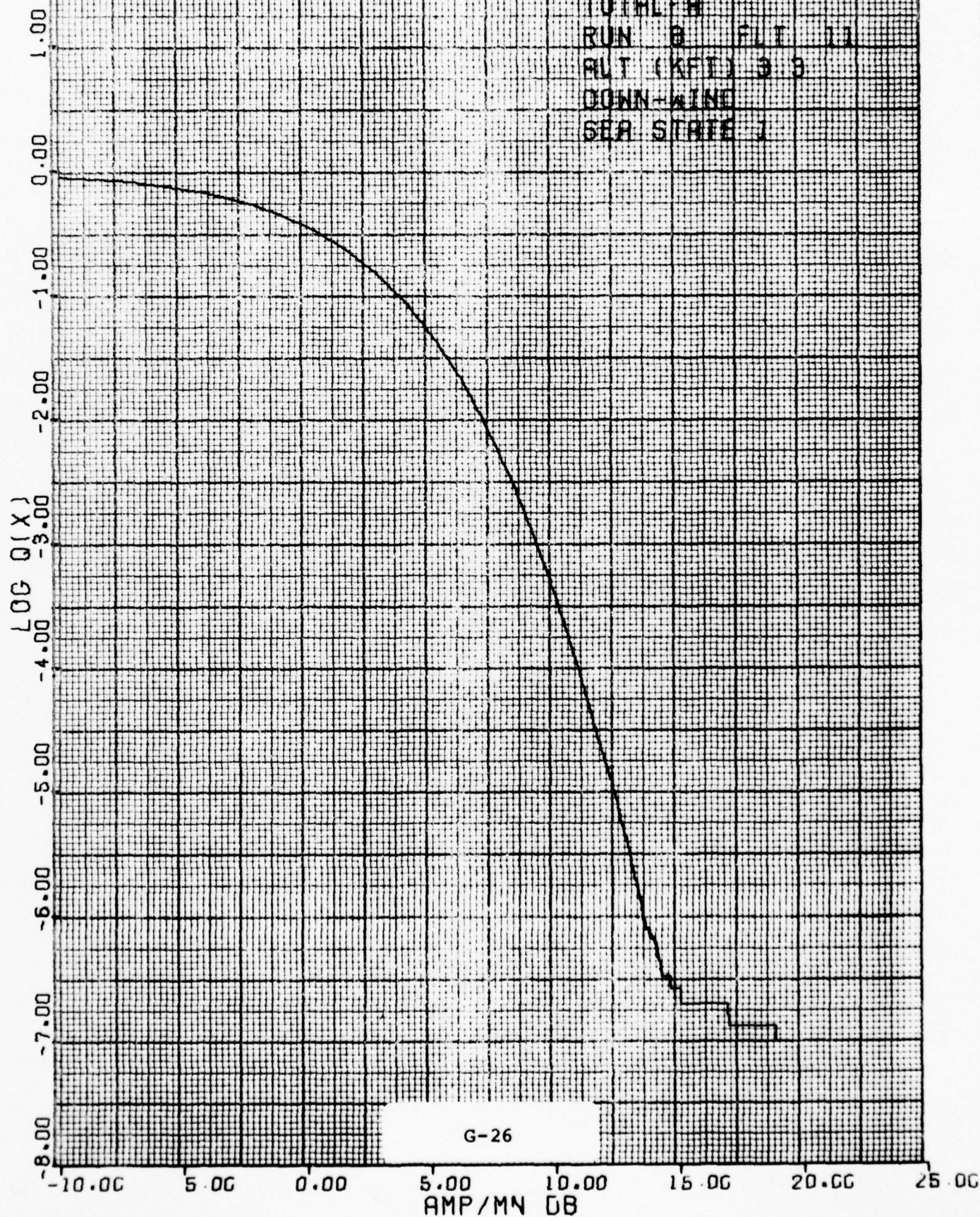
TOTAL-R

RUN 8 FLT 11

ALT (KFT) 39

DOWN-WIND

SEA STATE 1



G-26

LOG(Q)

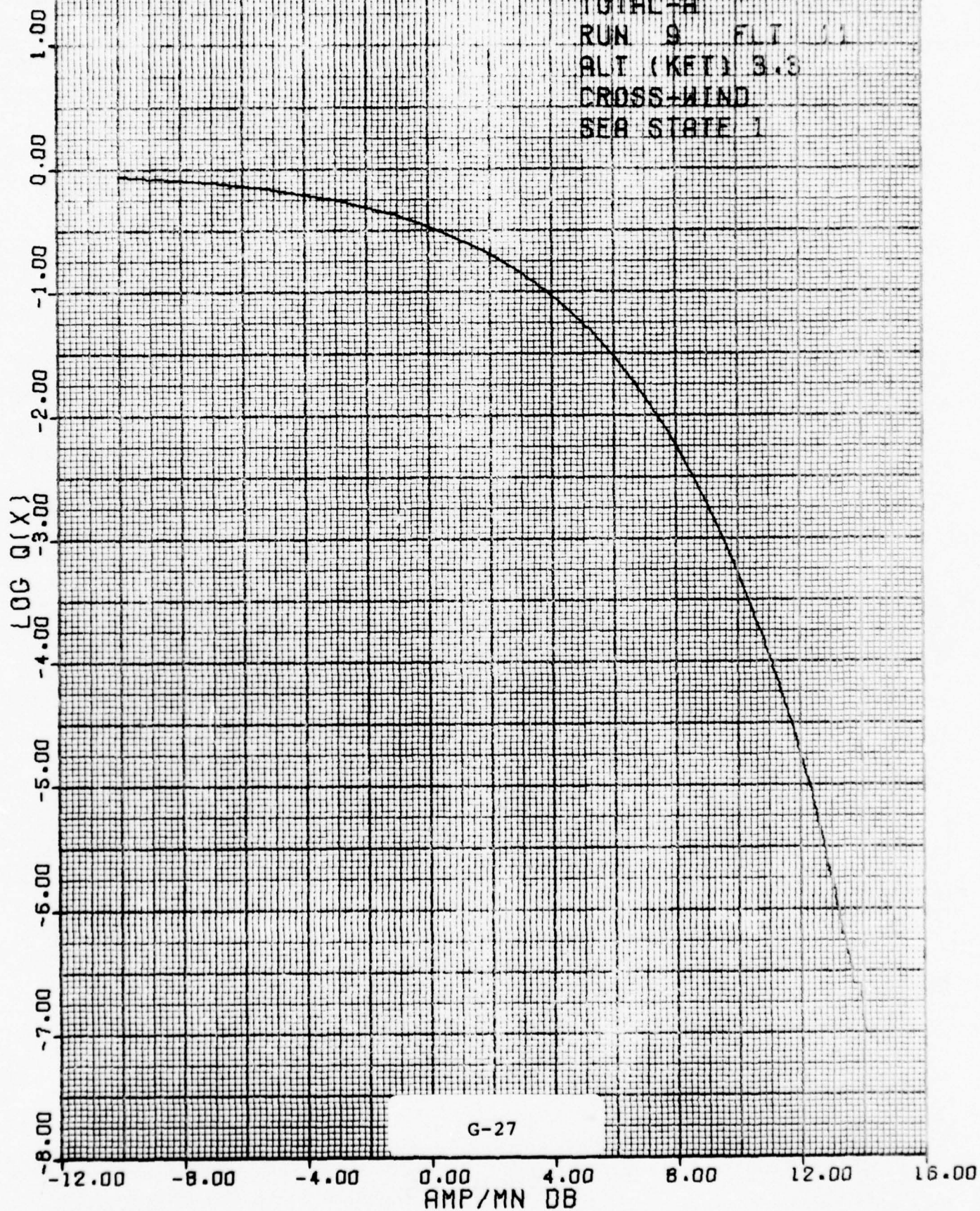
TOTAL-A

RUN 9 FLT 01

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 1



G-27

LOG(Q)

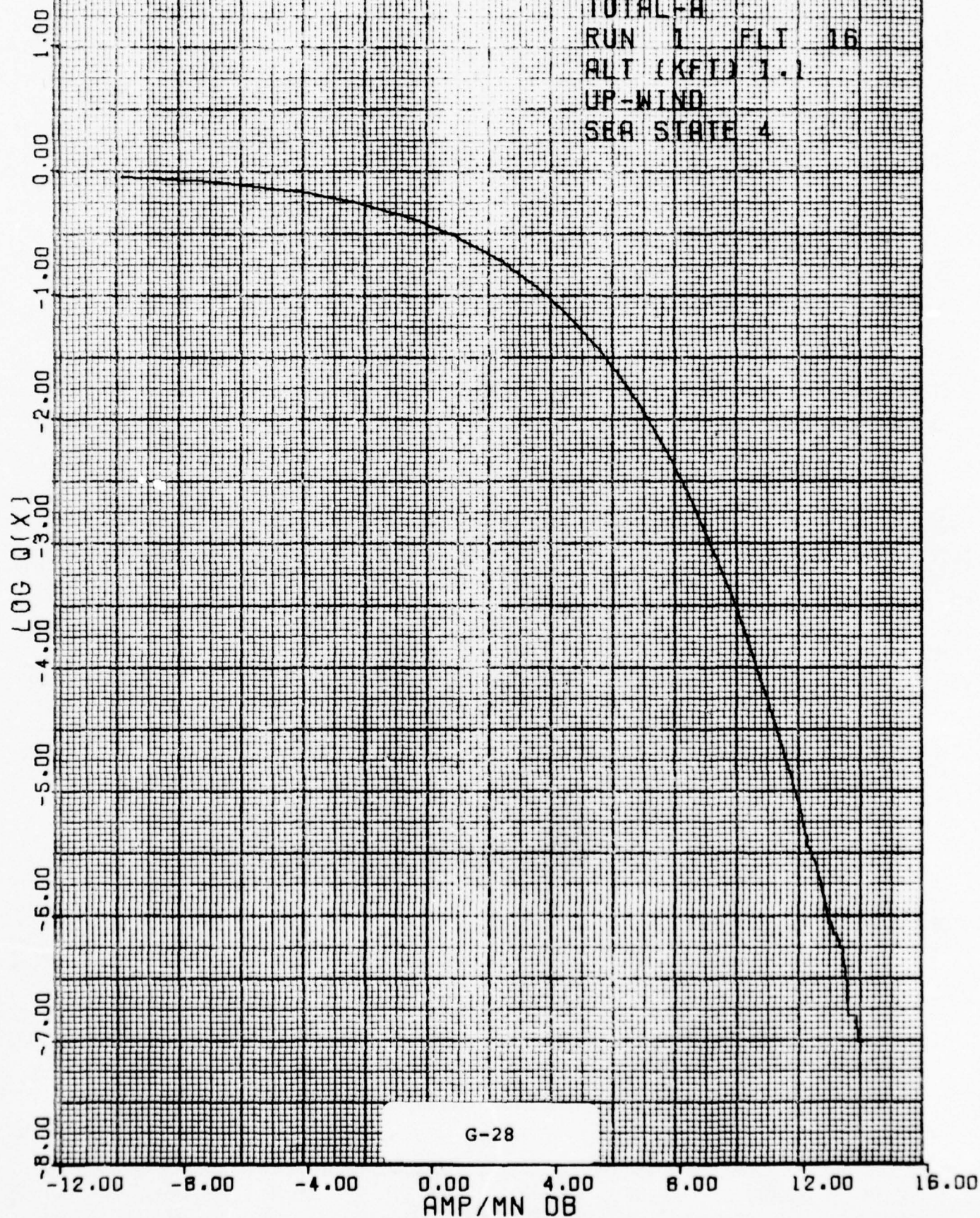
TOTAL-A

RUN 1 FLT 16

ALT (KFT) 1.1

UP-WIND

SEA STATE 4



G-28

LOG(Q)

TOTAL-R

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4

LOG Q(X)

G-29

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00

AMP/MN DB

LOG(Q)

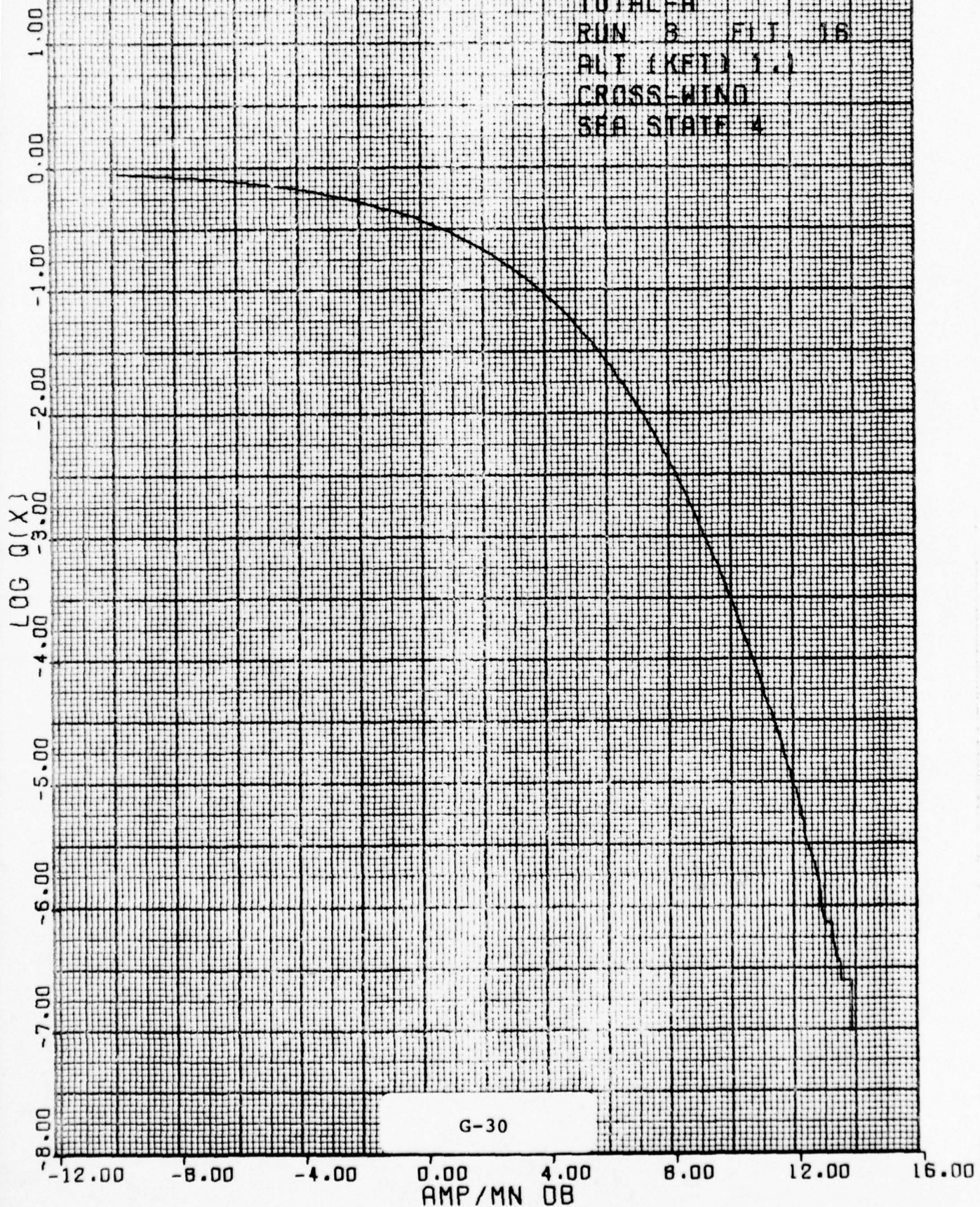
TOTAL-A

RUN 3 FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4



G-30

LOG(Q)

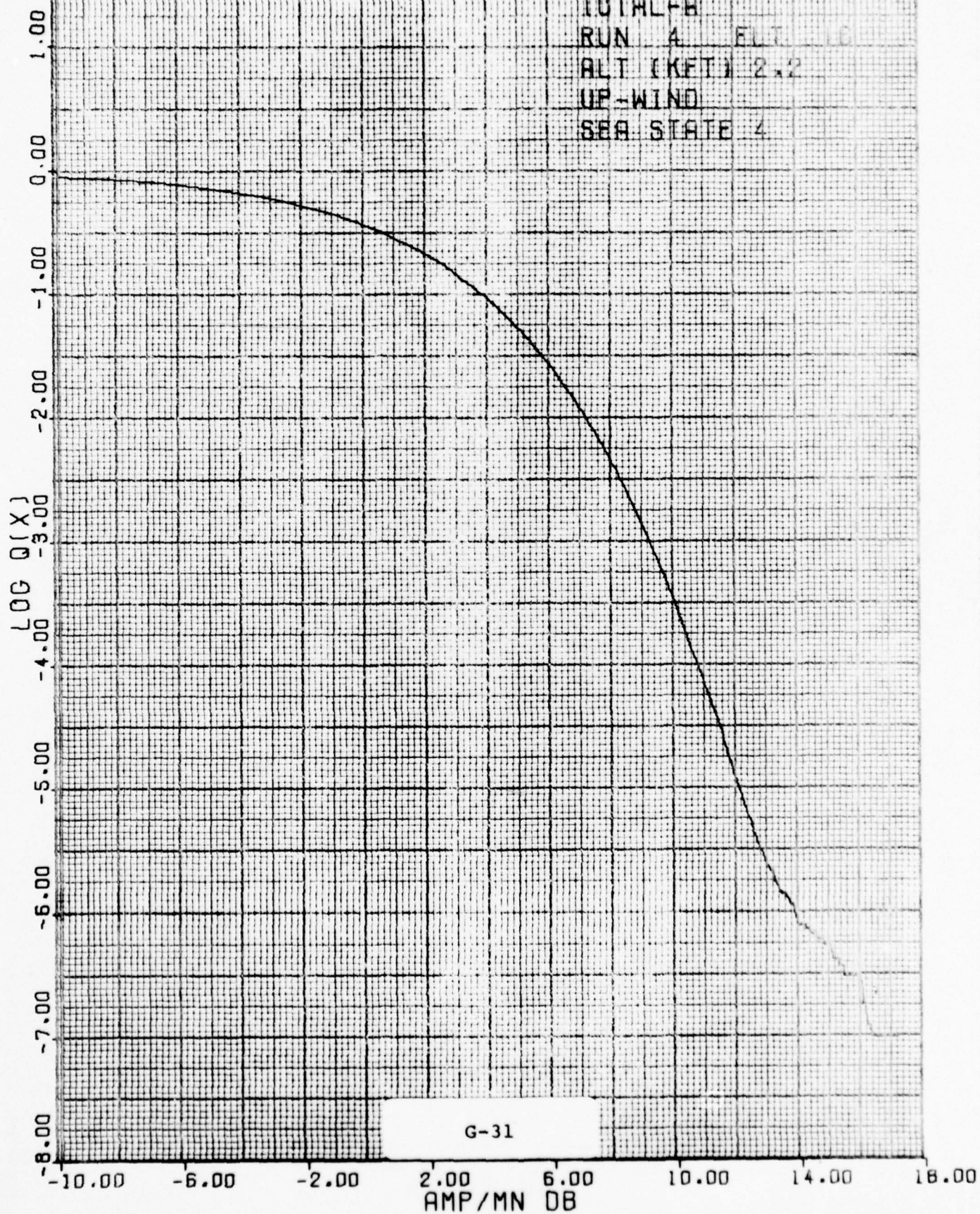
TOTAL-B

RUN 4 FLT 10

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-31

LOG(Q)

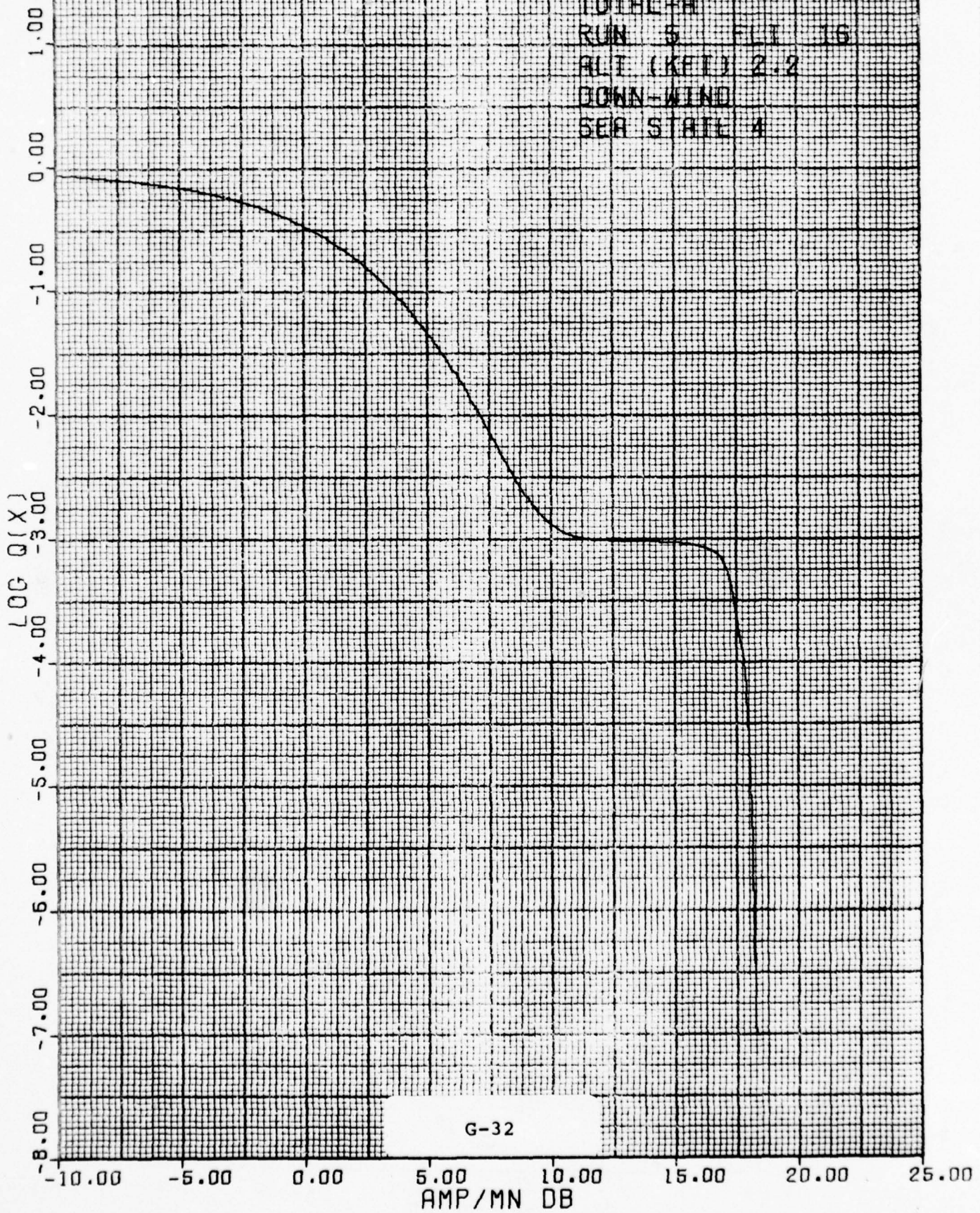
TOTAL-R

RUN 5 FLI 16

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4



G-32

LOG(Q)

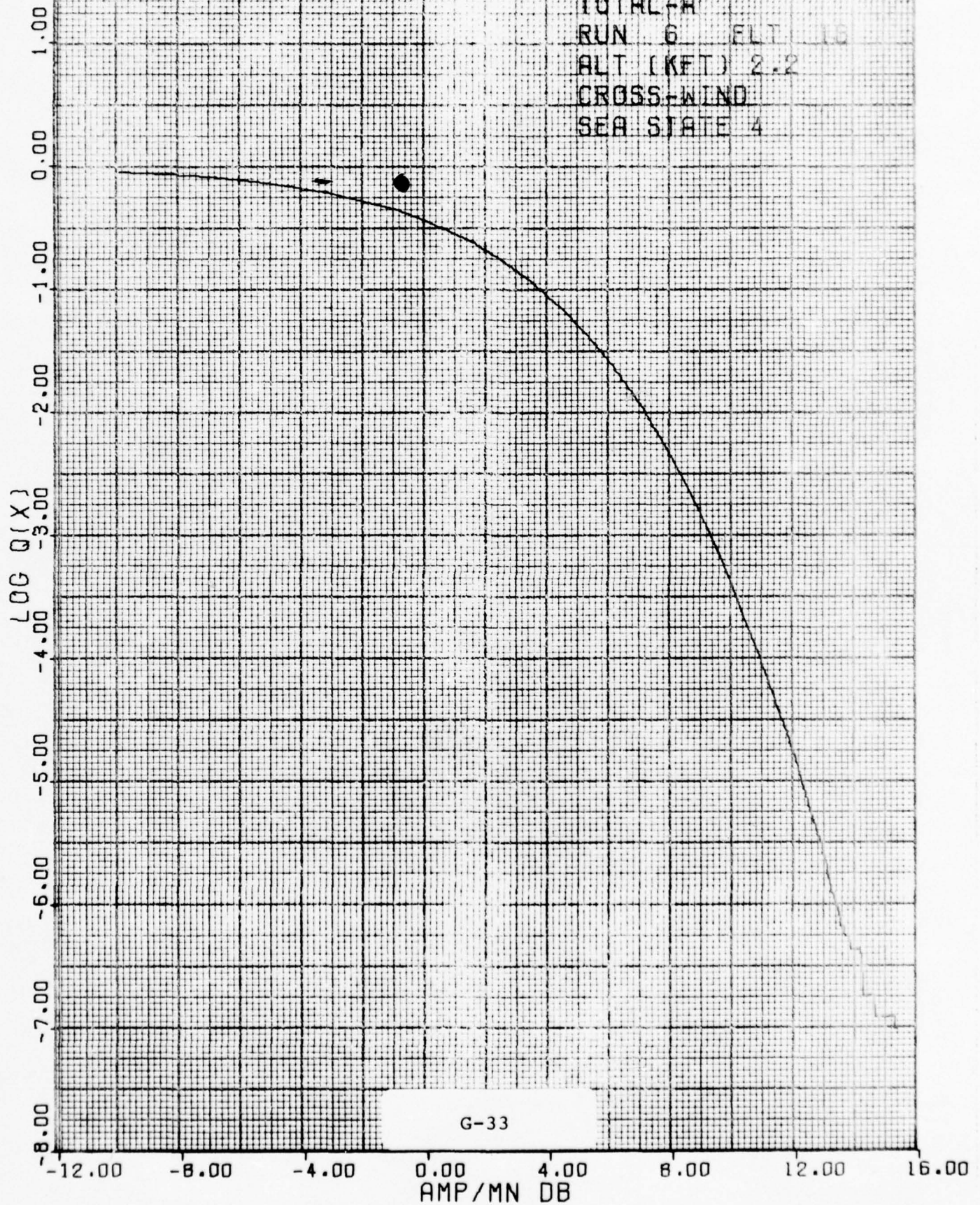
TOTAL-R

RUN 6 FLT 16

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



LOG(Q)

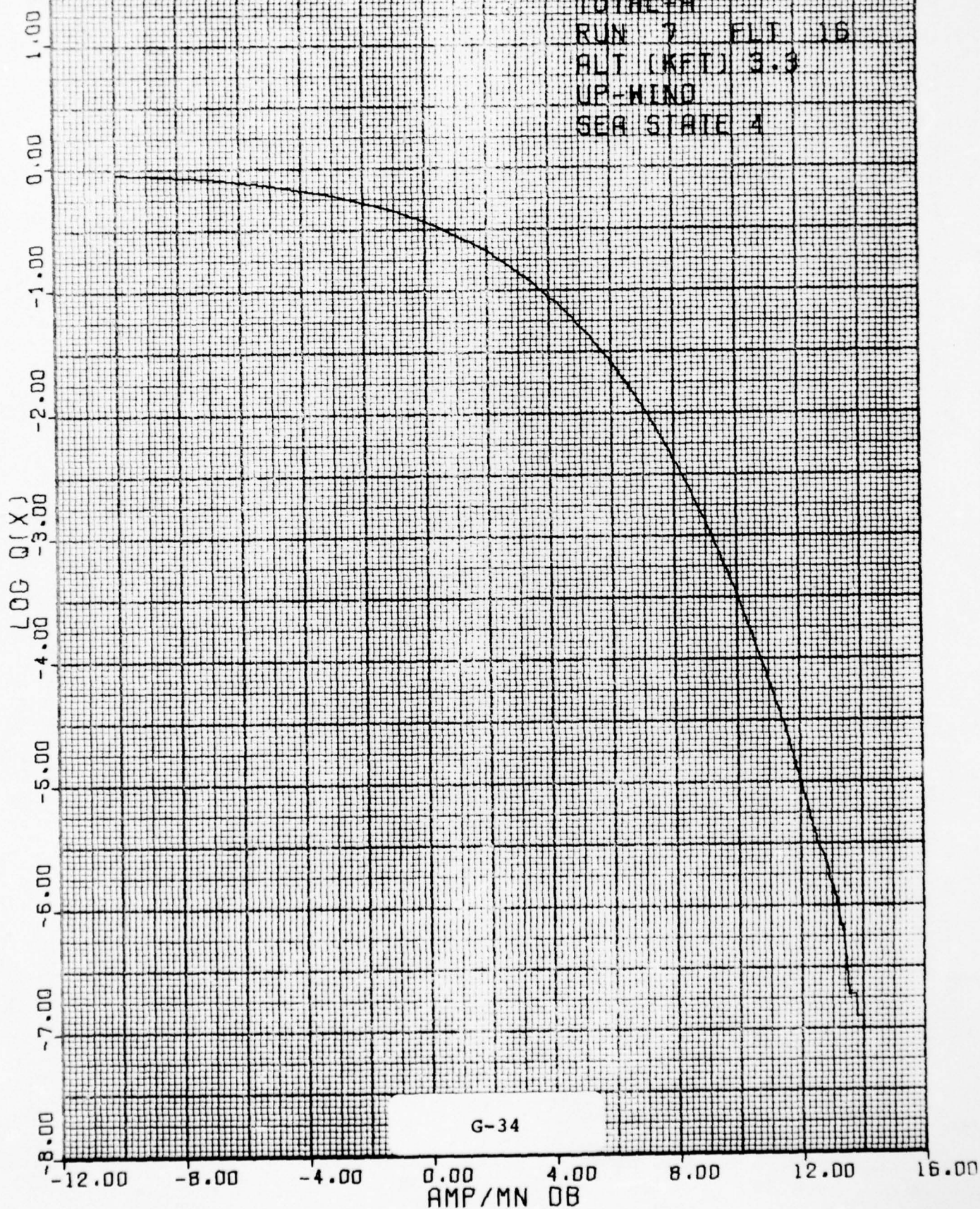
TOTAL-R

RUN 7 FLT 16

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



G-34

LOG Q

TOTAL-A

RUN 8 ALT 10

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4

LOG Q(X)

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

G-35

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00
AMP/MN DB

LOG(Q)

TOTAL-R

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4

LOG Q(X)

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

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-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

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-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

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-6.00

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-6.00

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-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

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-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

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-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-9.00

-10.00

-11.00

-12.00

-13.00

-14.00

-15.00

-16.00

-17.00

-18.00

-19.00

-20.00

-21.00

-22.00

-23.00

-24.00

-25.00

1.00

0.00

LOG(Q)

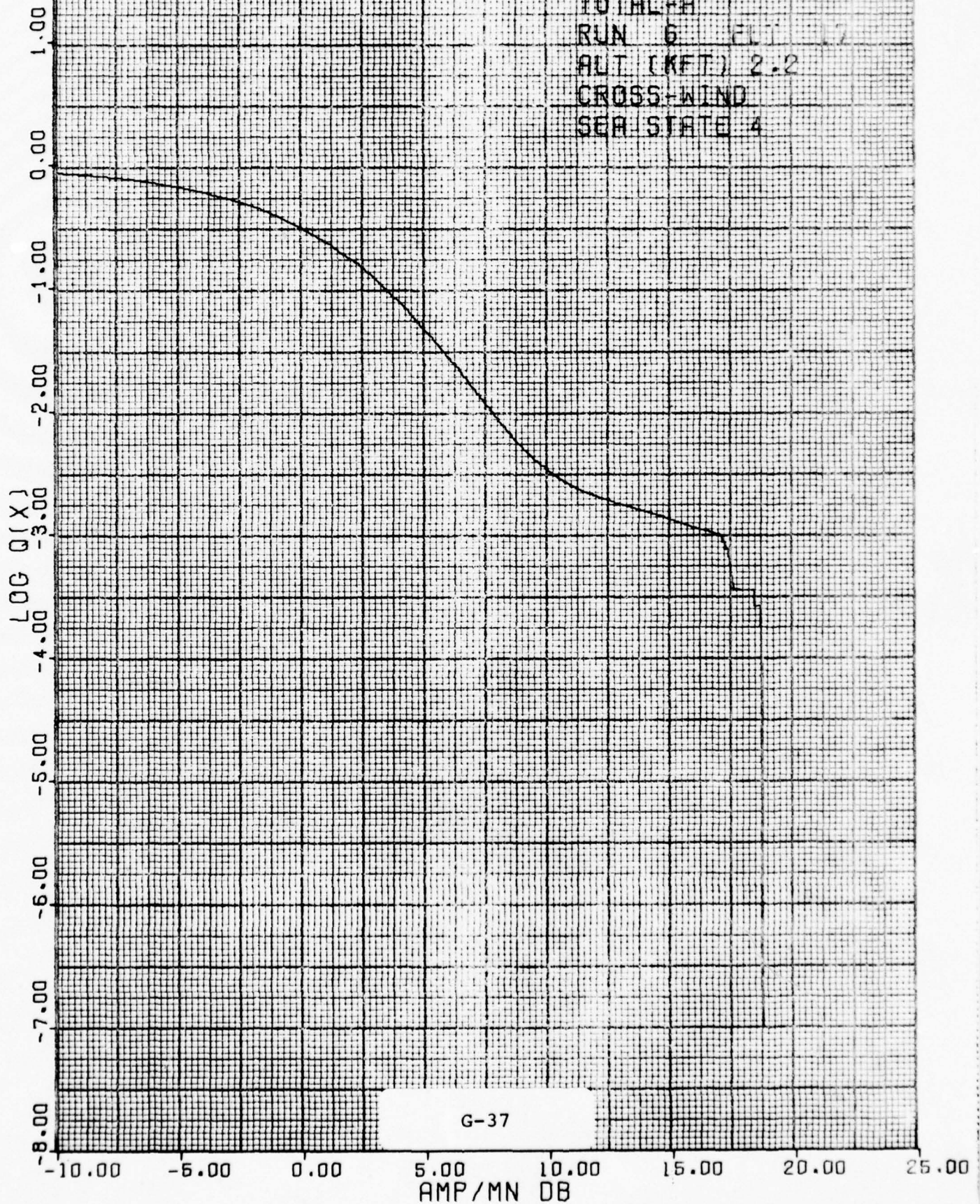
TOTAL-R

RUN 6 FLT 17

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



G-37

LOG(Q)

TOTAL-R

RUN 7 FLT 17

ALT (KFT) 3.3

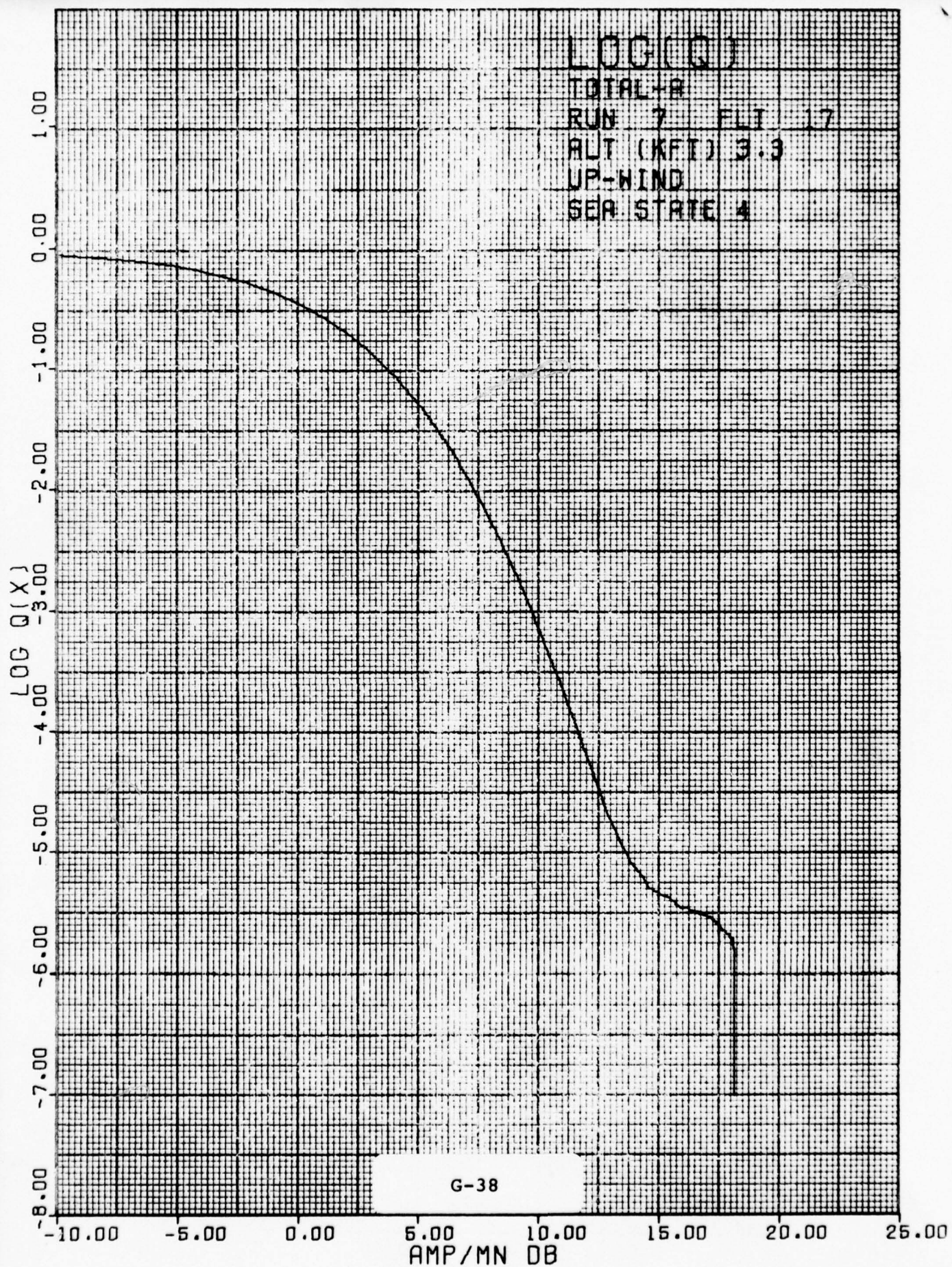
UP-WIND

SEA STATE 4

LOG Q(X)

G-38

AMP/MN DB



LOG(Q)

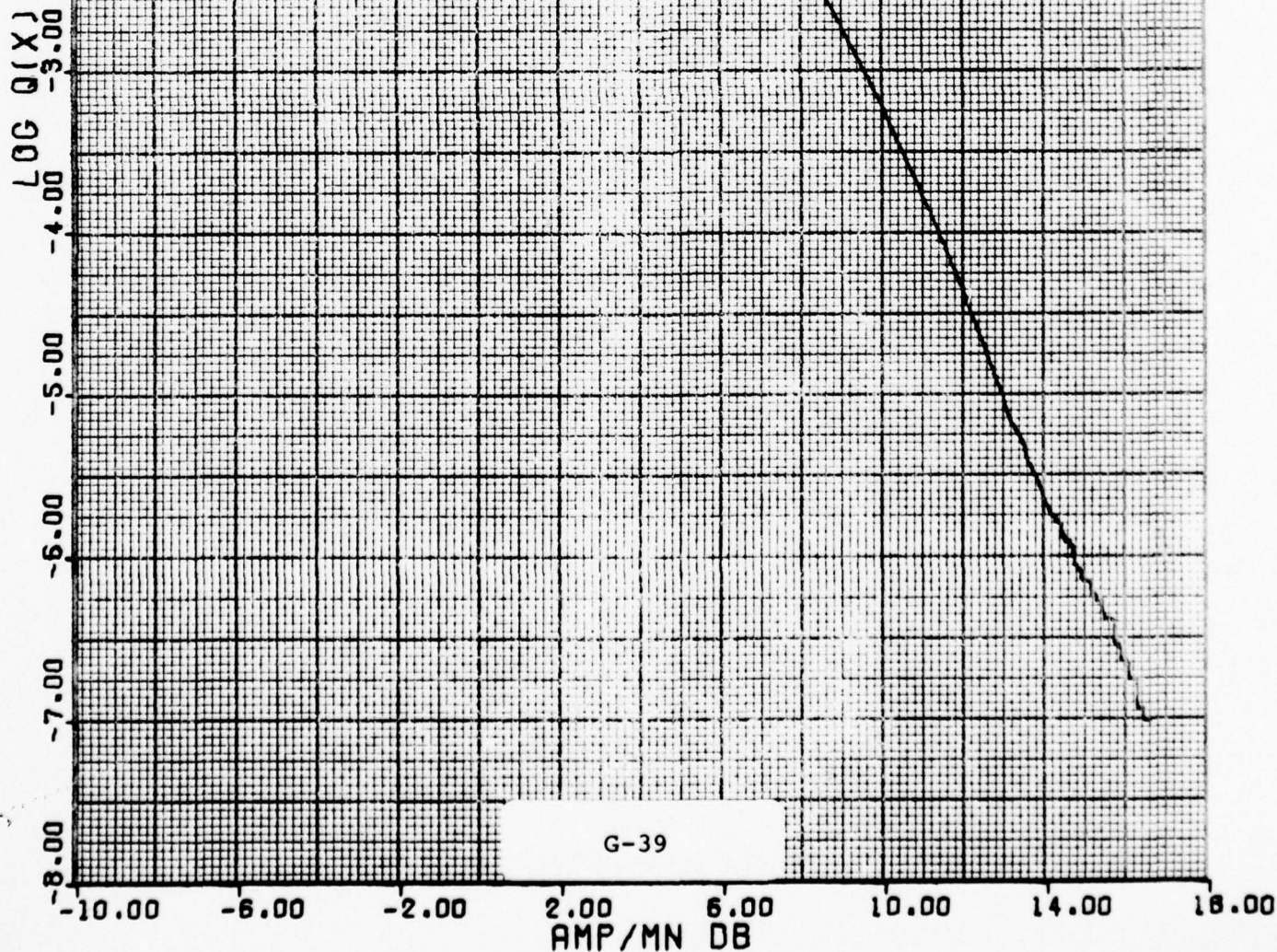
TOTAL-R

RUN 8 FLT 17

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4



G-39

UNCLASSIFIED

1.1.2 Histograms TOTAL LOG (Q)

All valid clutter data for each run is included.

The lack of a suffix after TOTAL indicates no normalization procedures were used. The vertical axis is the logarithm base 10 of 1 minus the cumulative probability, i.e., $\text{LOG}_{10}(1-P_{(x)})$. Various points on the tail of the distribution are clearly read from this type of plot. The horizontal axis is the clutter power per cell in dB.

LOG(Q)

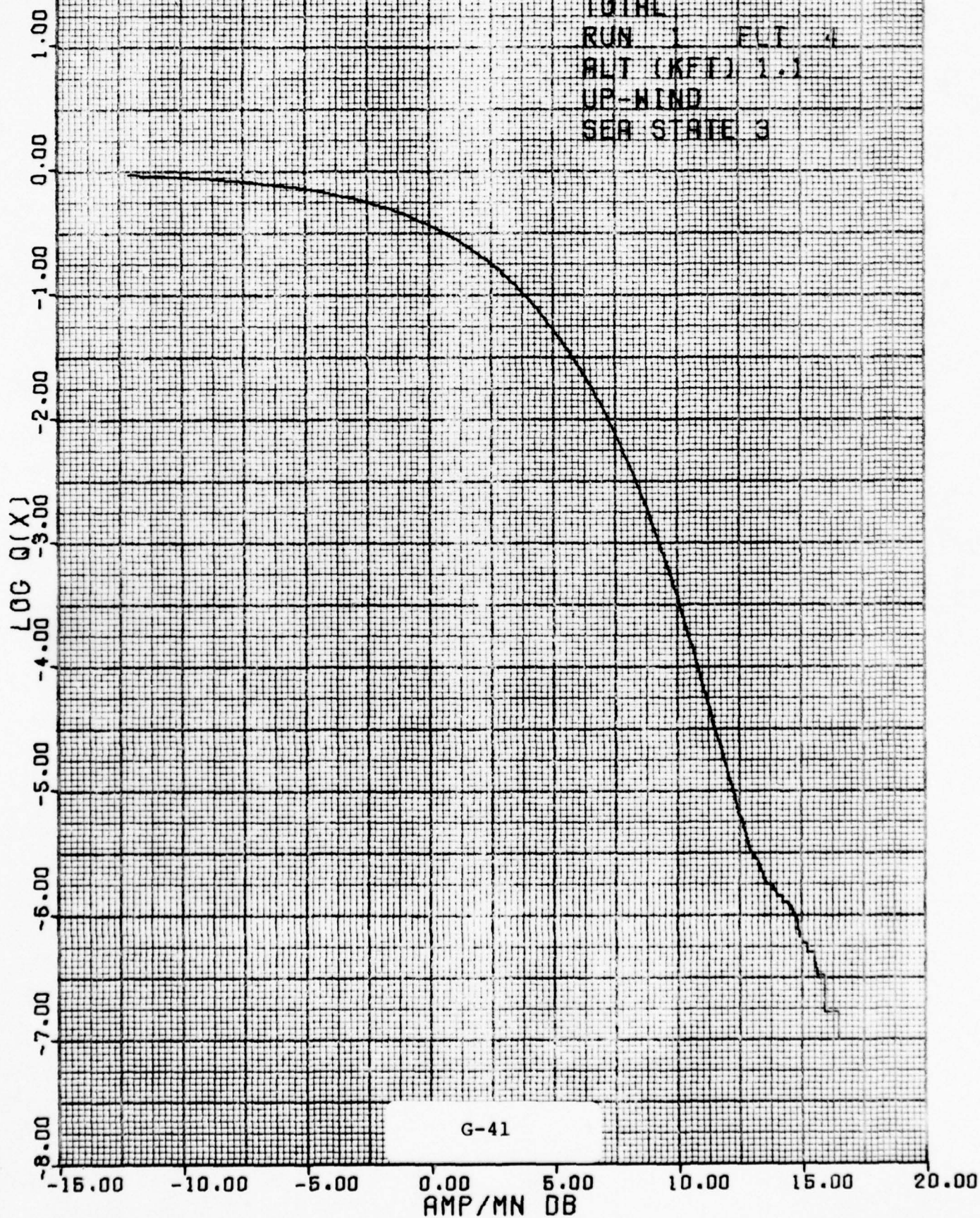
TOTAL

RUN 1 ELT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3



G-41

LOG(Q)

TOTAL

RUN 3 FLT 4

ALT (MFT) 1.1

CROSS-WIND

SEA STATE 3

LOG Q(X)

G-42

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG(Q)

TOTAL

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5

LOG Q(X)

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

G-43

-12.00

-8.00

-4.00

0.00

4.00

8.00

12.00

16.00

AMP/MN DB

LOG(Q)

TOTAL

RUN 3 FLT 6

ALT (KFT) 1.1

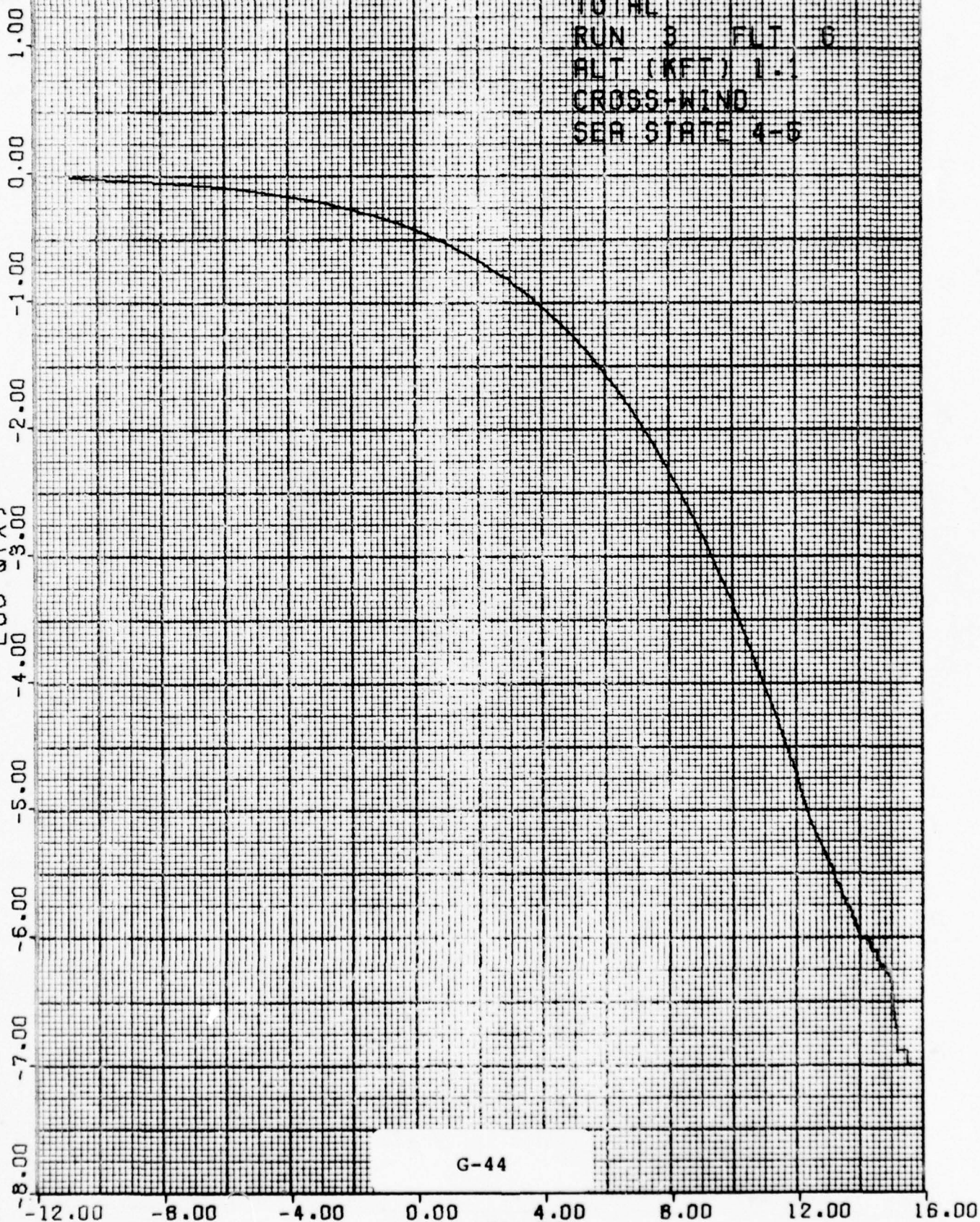
CROSS-WIND

SEA STATE 4-5

LOG Q(X)

G-44

AMP/MN DB



LOG(Q)

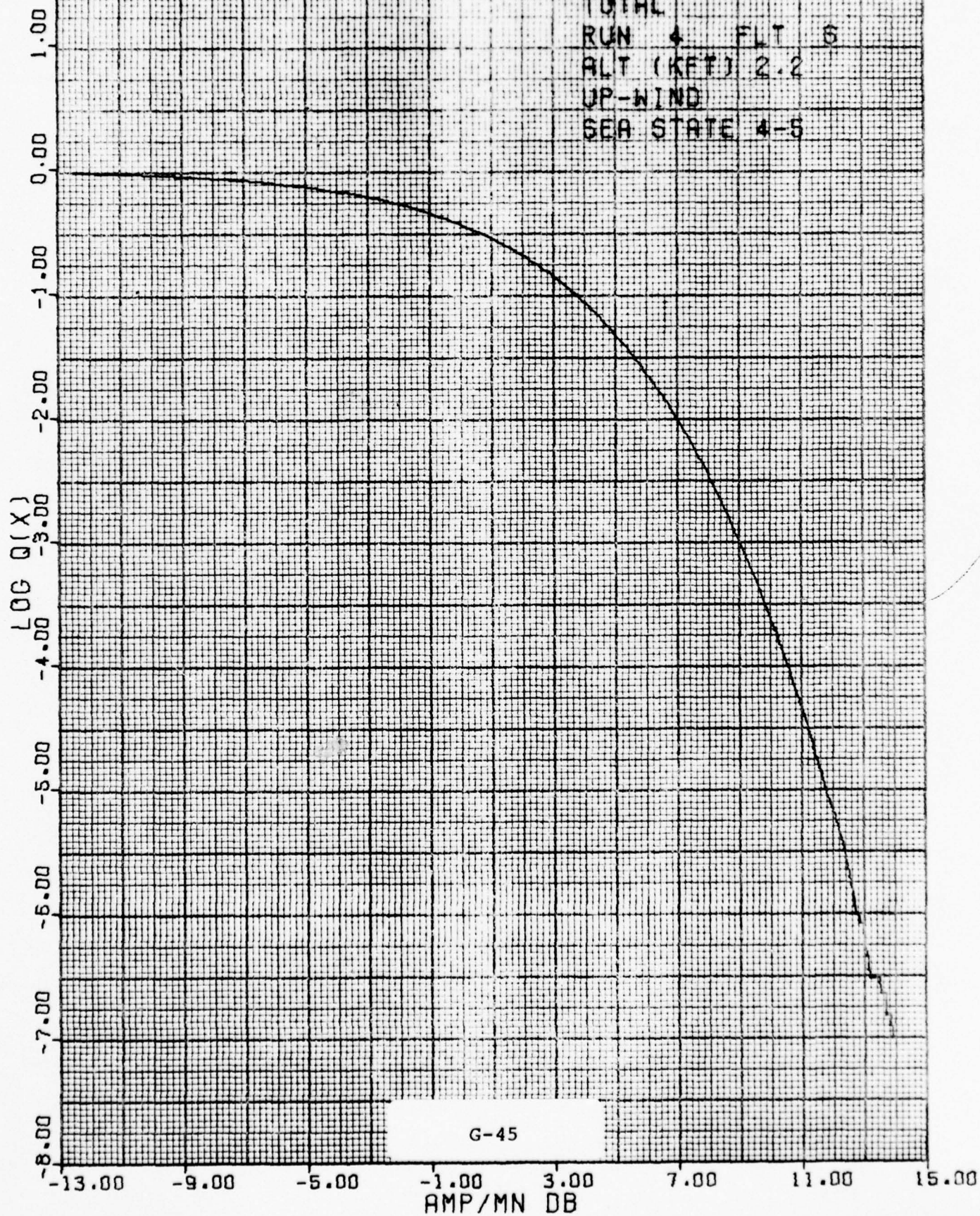
TOTAL

RUN 4 FLT 6

ALT (KFT) 2.2

UP-WIND

SEA STATE 4-5



LOG(Q)

TOTAL

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5

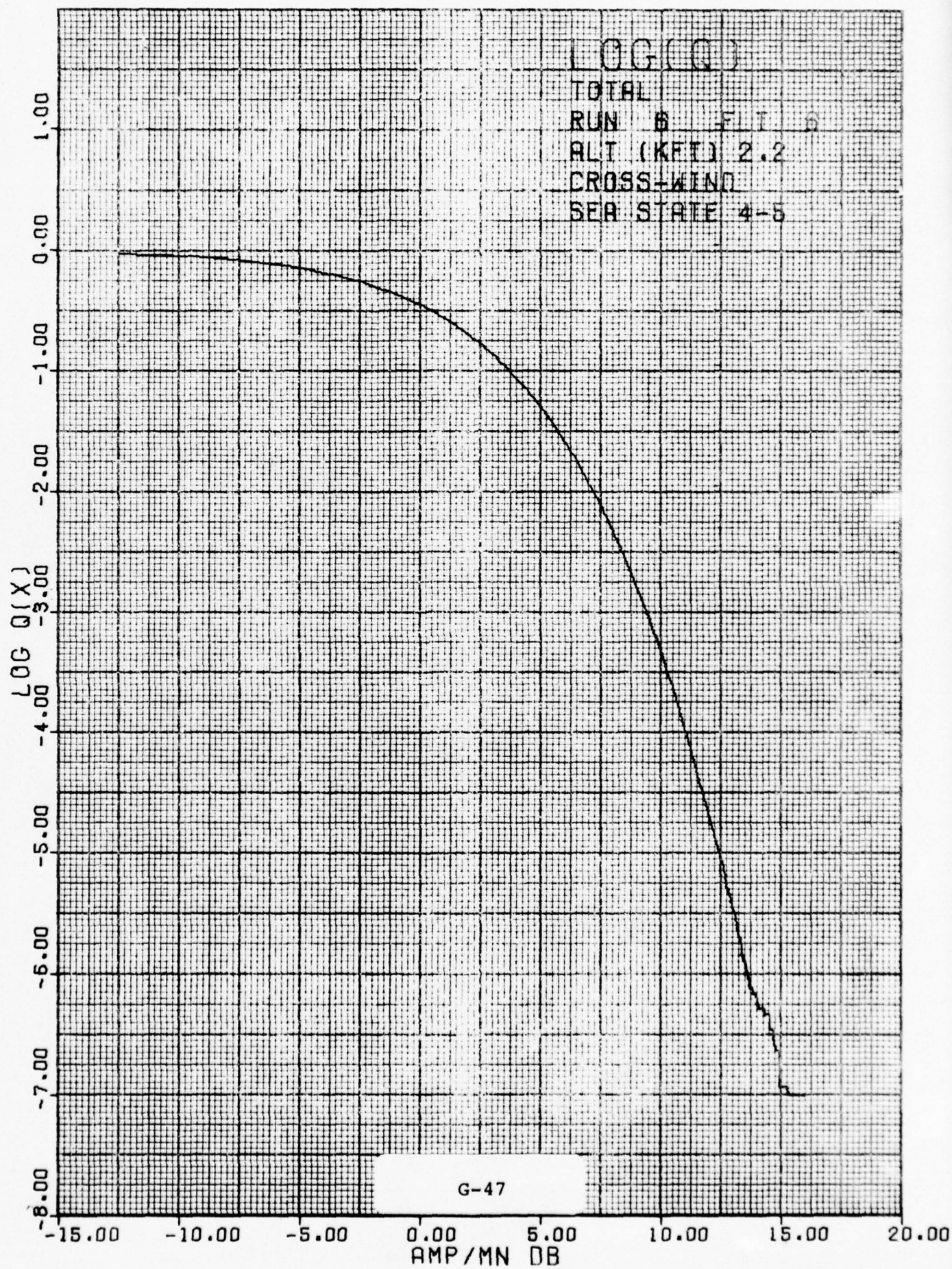
LOG Q(X)

G-46

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00



LOG(Q)

TOTAL

RUN 7 FLT 6

ALT (KFT) 3.3

UP-WIND

SEA STATE 4-5

LOG Q(X)

LOG

LOG

LOG

LOG

LOG

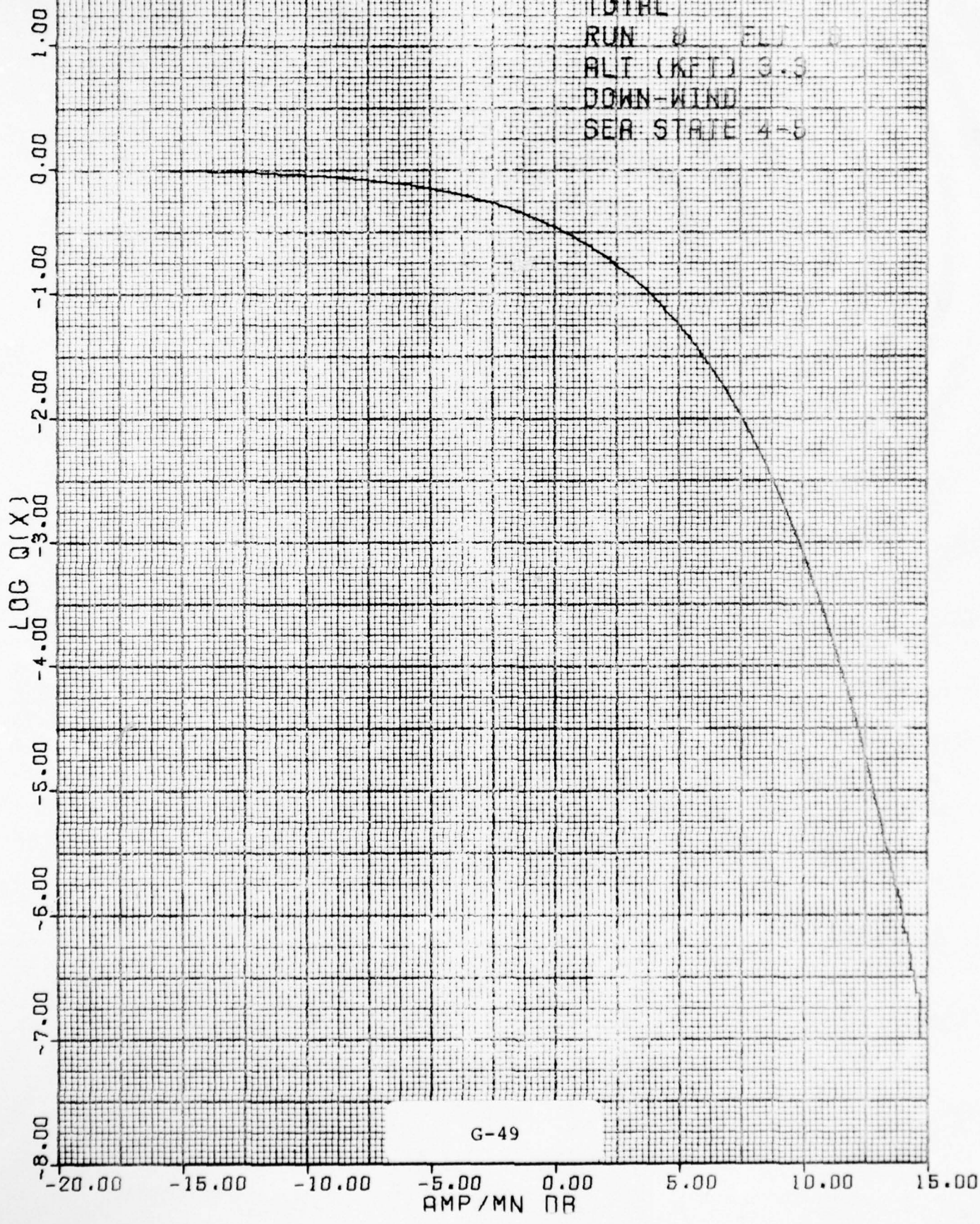
G-48

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG Q(X)
TOTAL
RUN 8 FLT 3
ALT (KFT) 3.3
DOWN-WIND
SEA STATE 4-5



G-49

LOG(Q)

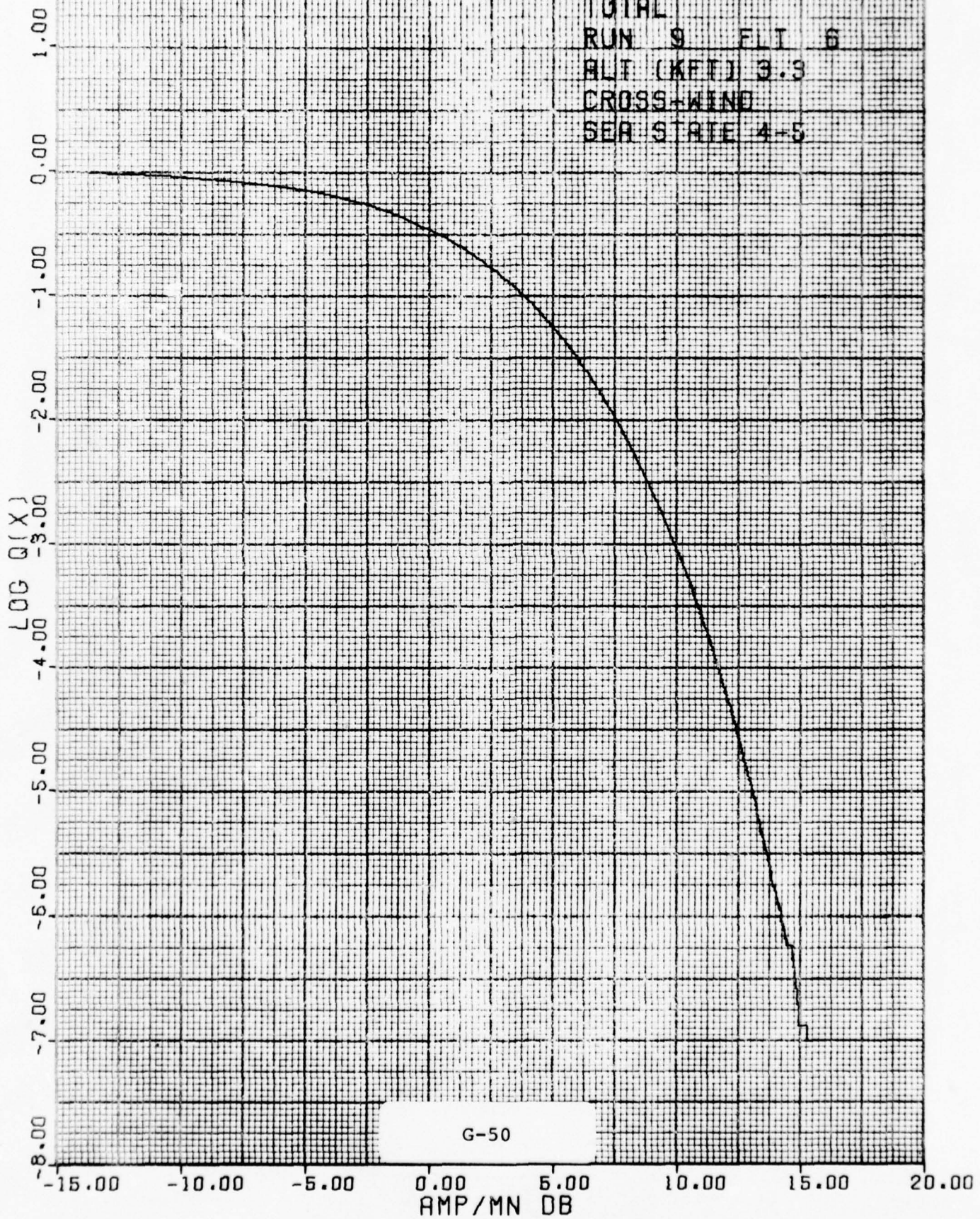
TOTAL

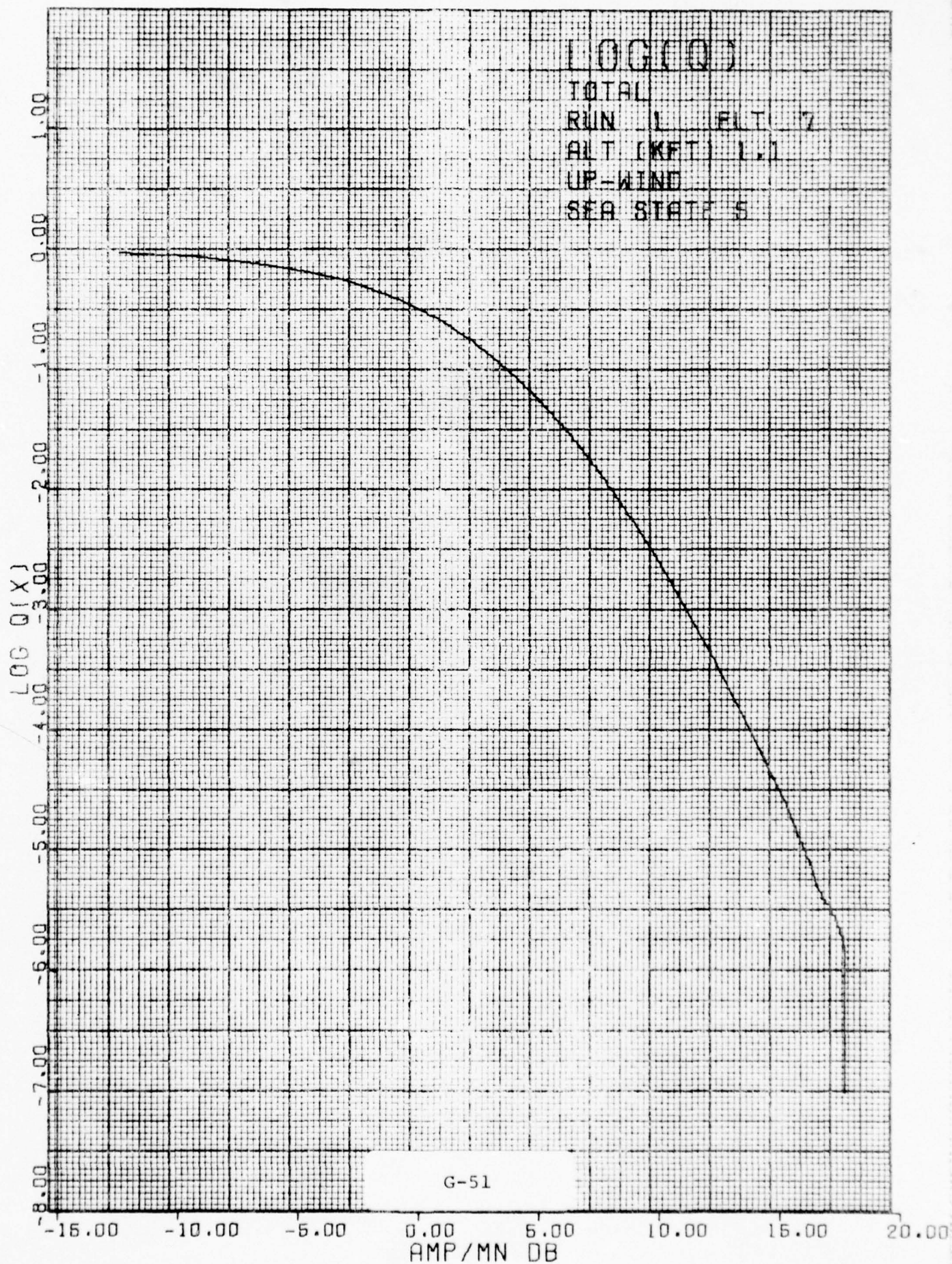
RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5





LOG(Q)

TOTAL

RUN 2 FLT 7

ALT (KFT) 1.1

DOWN WIND

SEA STATE 5

LOG Q(X)

G-52

AMP/MN DB

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG(Q)

TOTAL

RUN 3 FLT 7

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 5

LOG Q(X)

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

G-53

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00
AMP/MN DB

LOG(Q)

TOTAL

RUN 4 FLT 7

ALT (KFT) 2.2

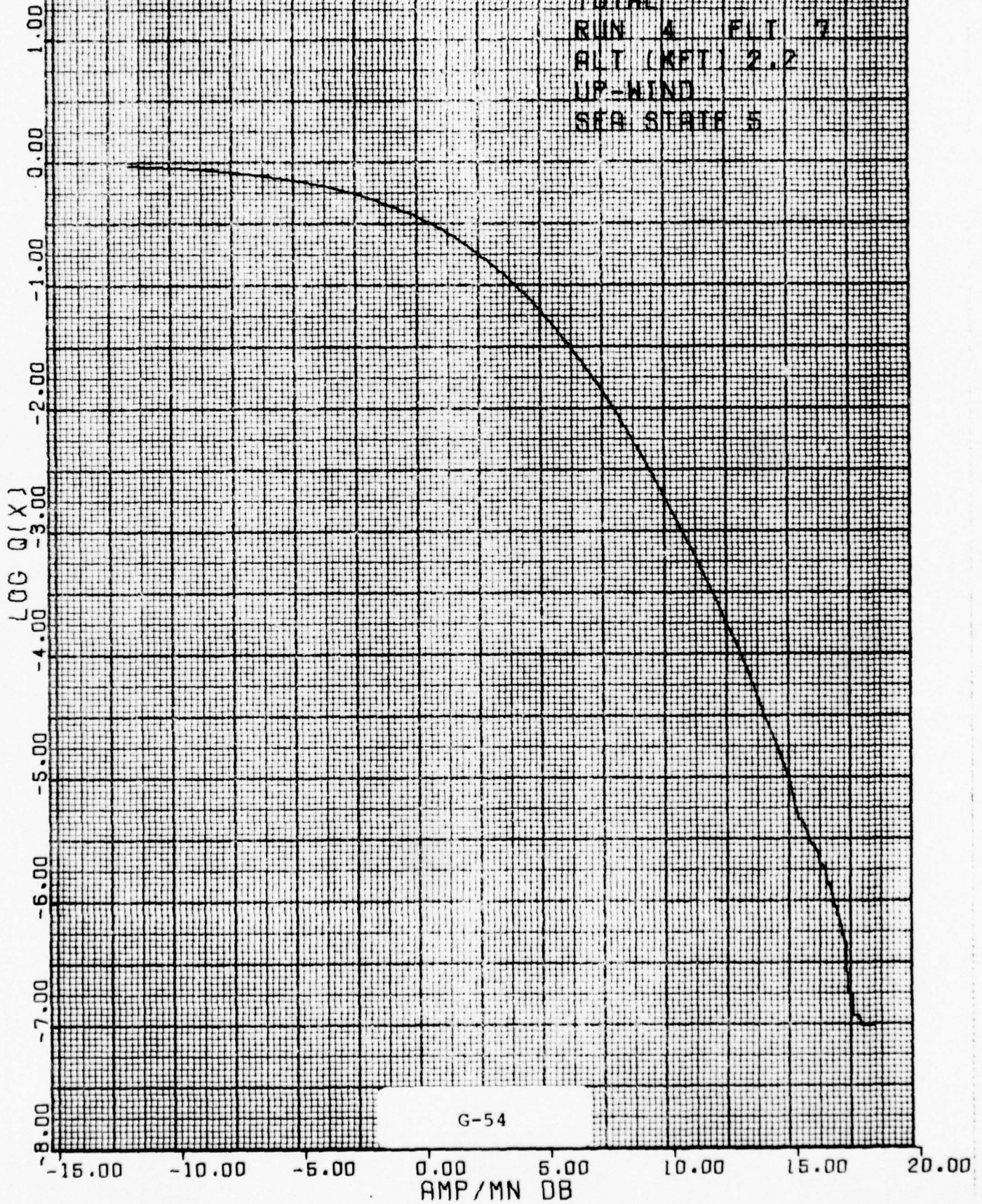
UP-WIND

SEA STATE 5

LOG Q(X)

G-54

AMP/MN DB



LOG(Q)

TOTAL

RUN 6 ELL 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5

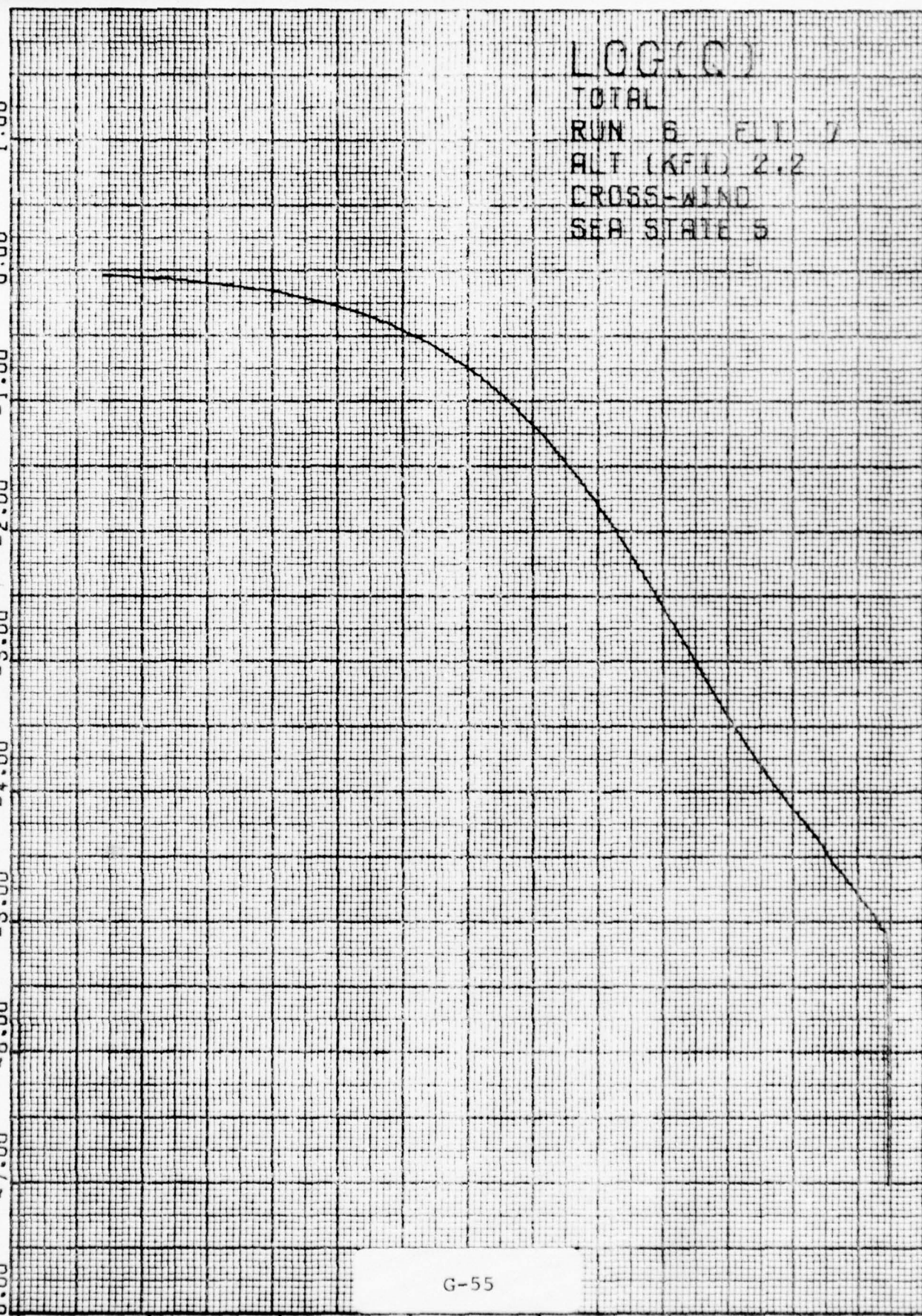
LOG Q(X)

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

G-55

AMP/MN DB

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00



LOG(Q)

TOTAL

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 3

LOG Q(X)

G-56

AMP/MN DB

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

-15.00

-10.00

-6.00

0.00

5.00

10.00

15.00

20.00

LOG(Q)

TOTAL

RUN 8 FLT 7

ALT (KFT) 3.3

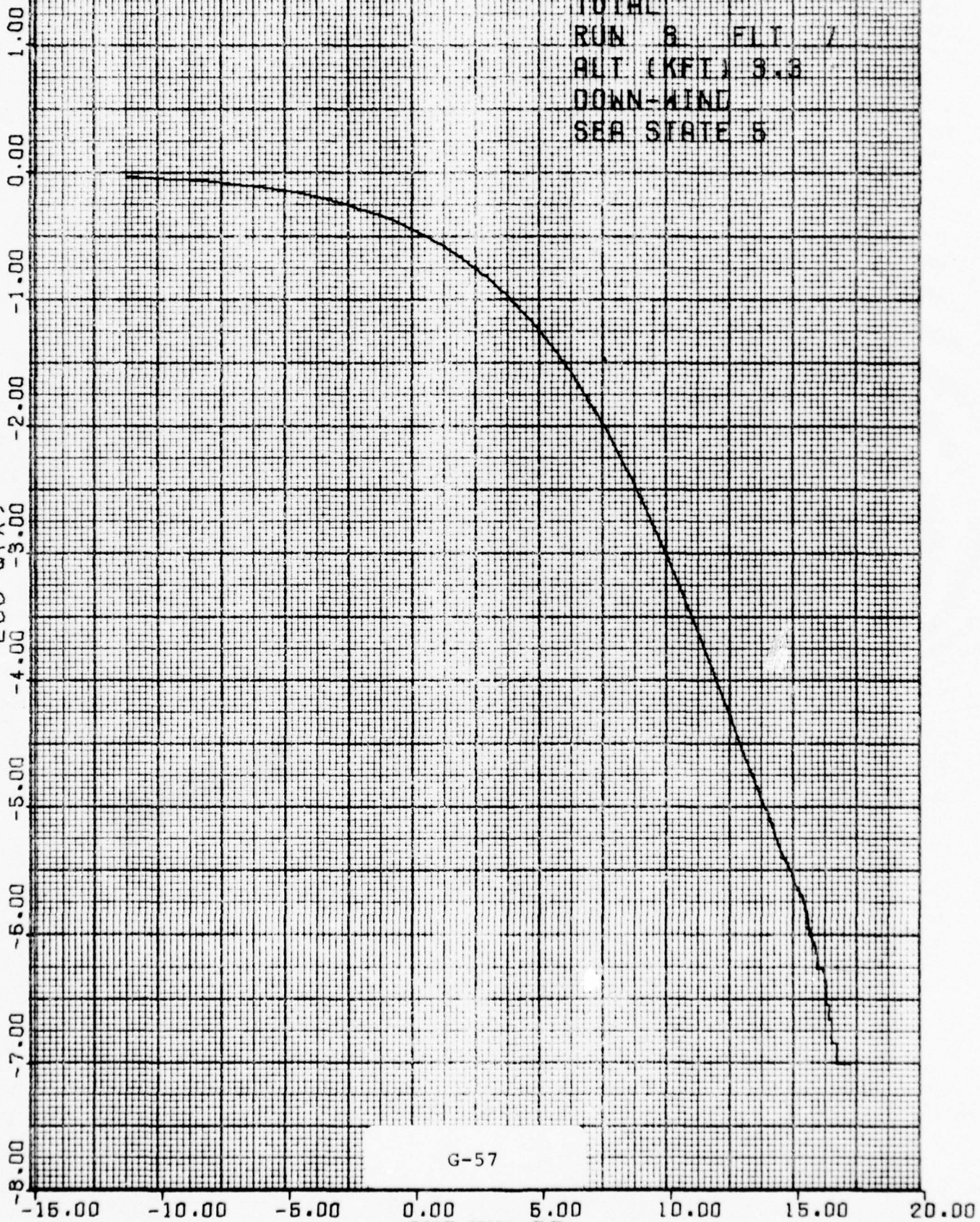
DOWN-WIND

SEA STATE 5

LOG Q(X)

G-57

AMP/MN DB



LOG(Q)

TOTAL

RUN 9 FLT 7

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 5

LOG Q(X)

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

G-58

AMP/MN DB

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG(Q)

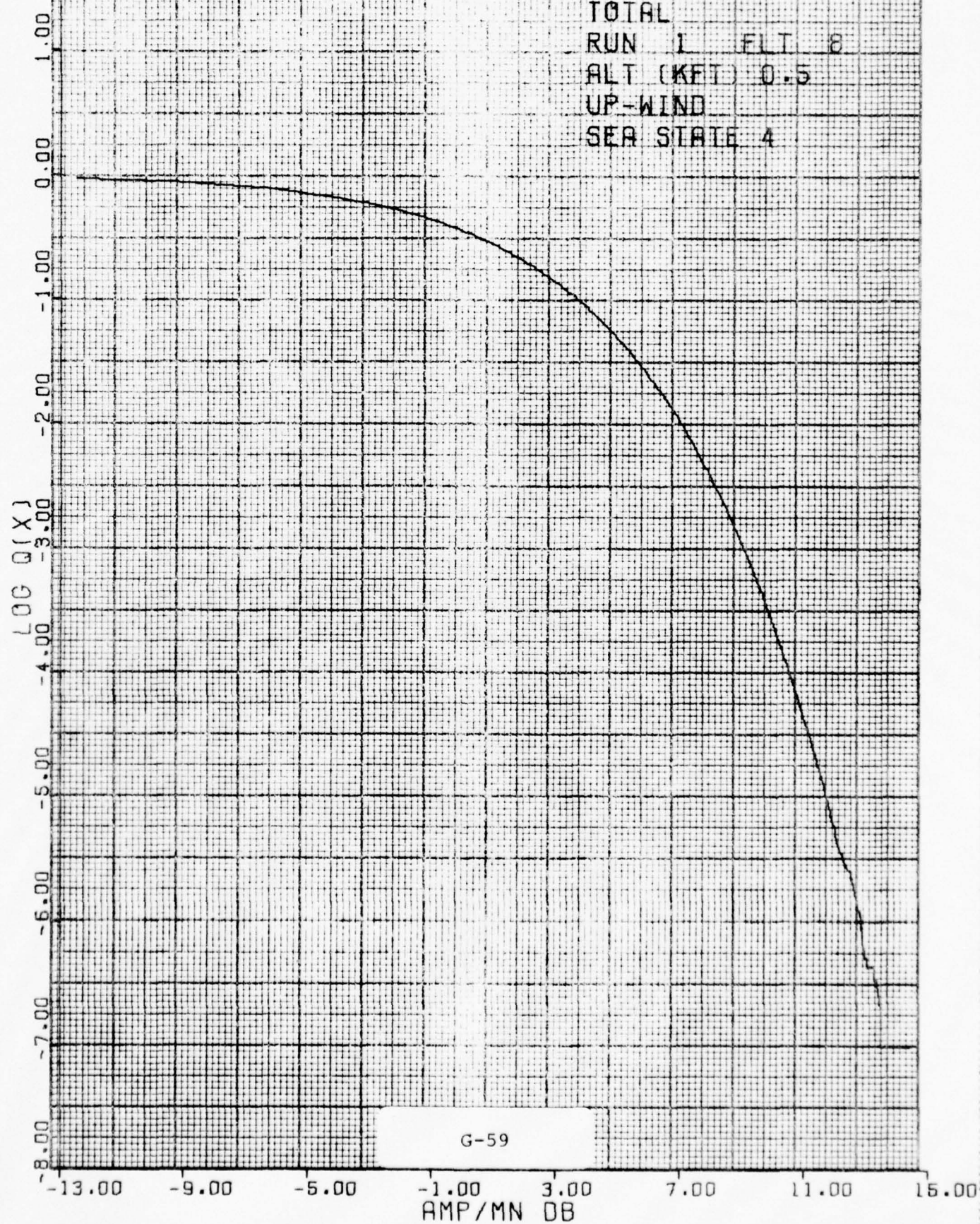
TOTAL

RUN 1 FLT 8

ALT (KFT) 0.5

UP-WIND

SEA STATE 4



G-59

LOG(Q)

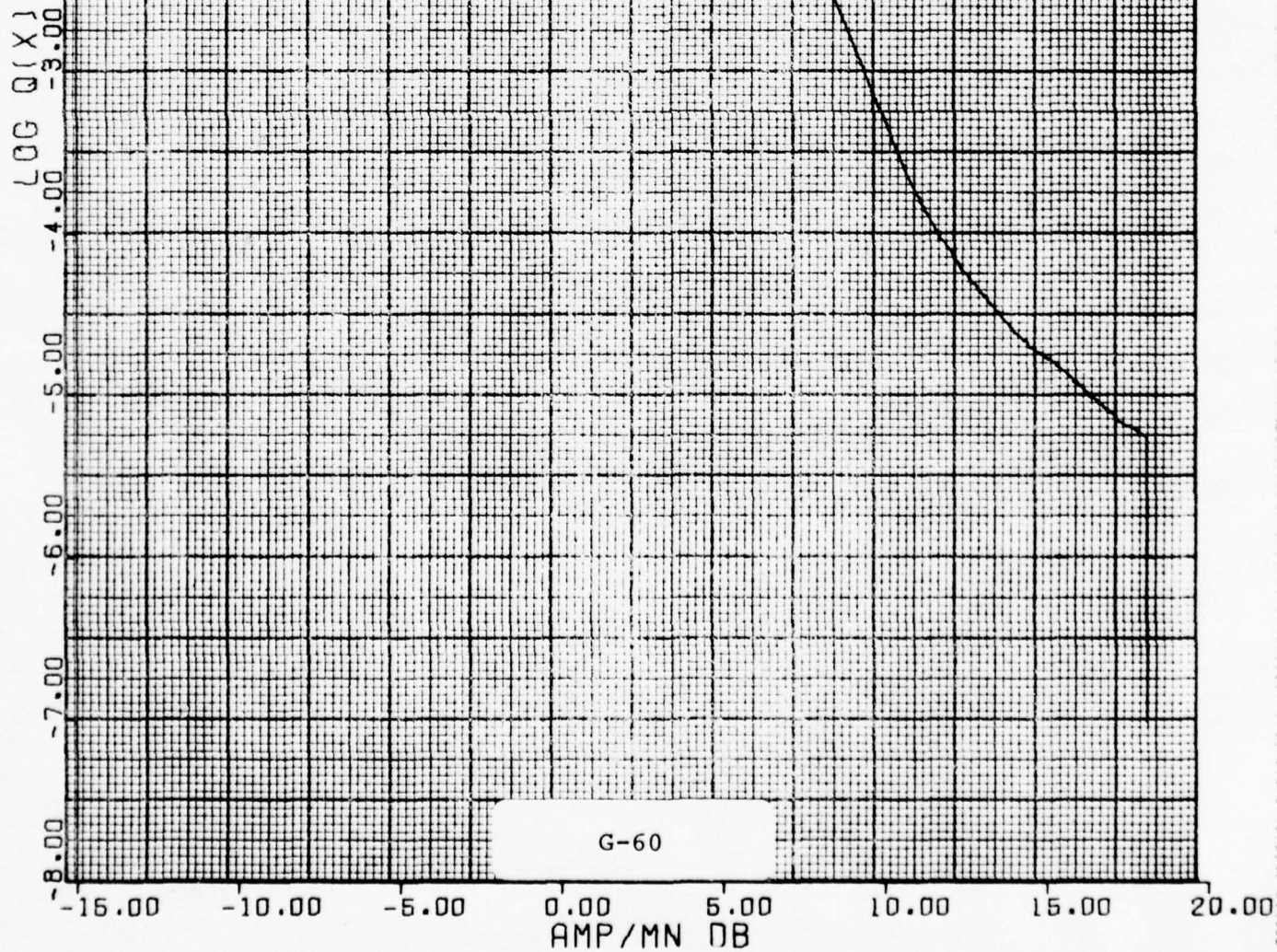
TOTAL

RUN 2 FLT 8

ALT (KFT) 0.5

DOWN-WIND

SEA STATE 4



G-60

LOG(C)

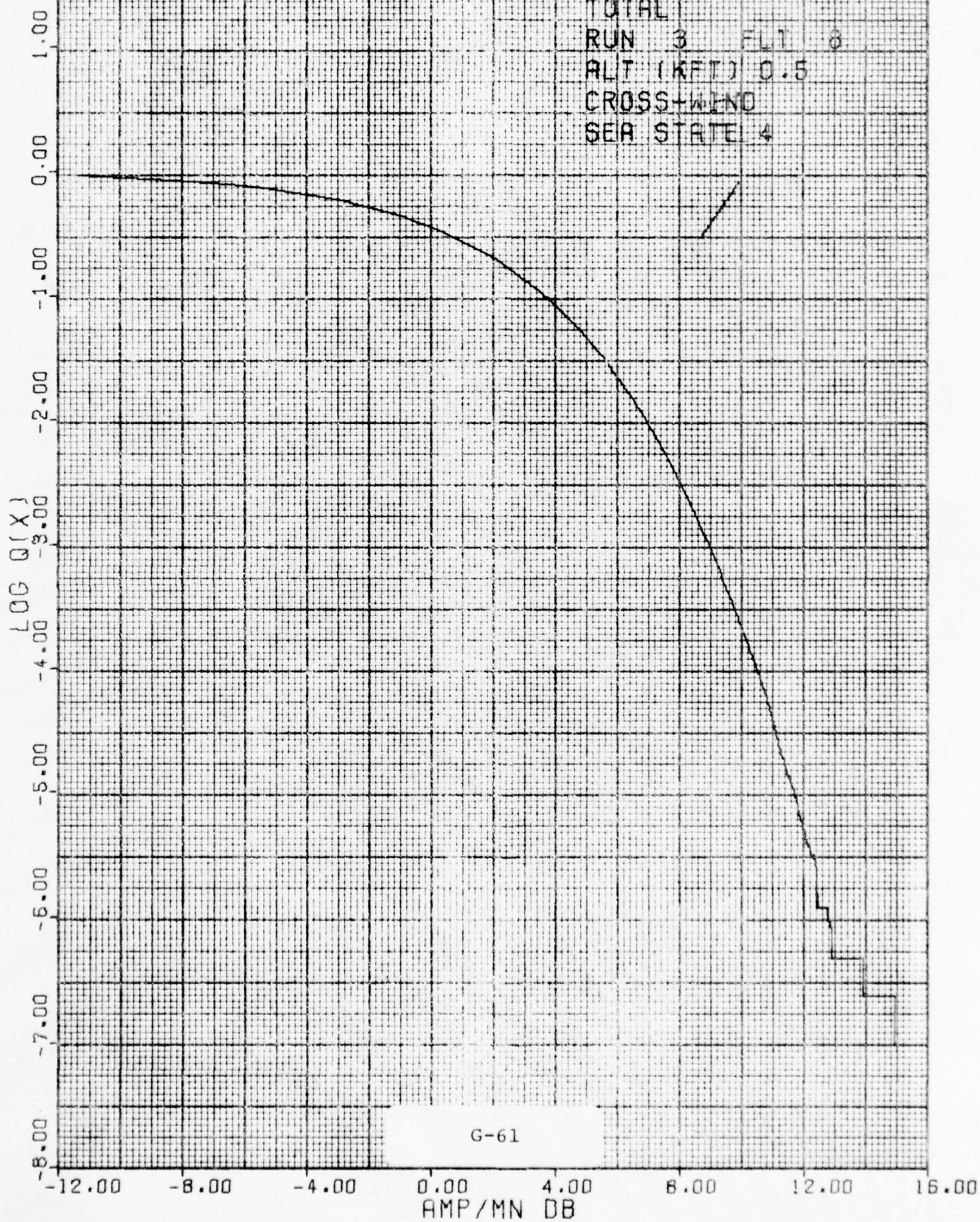
TOTAL

RUN 3 FL1 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



G-61

LOG(Q)

TOTAL

RUN 4 FLT 11

ALT (KFT) 2.2

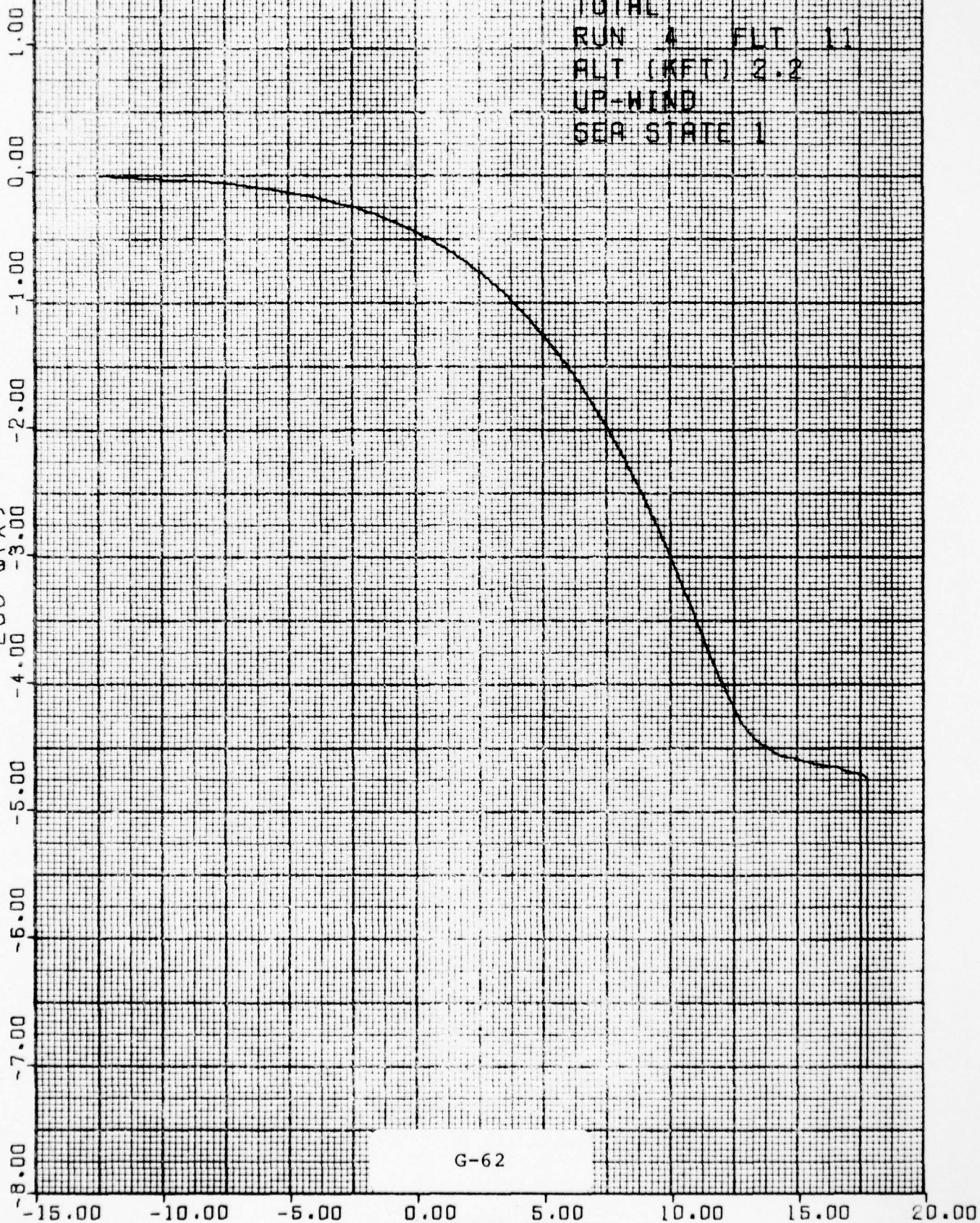
UP-WIND

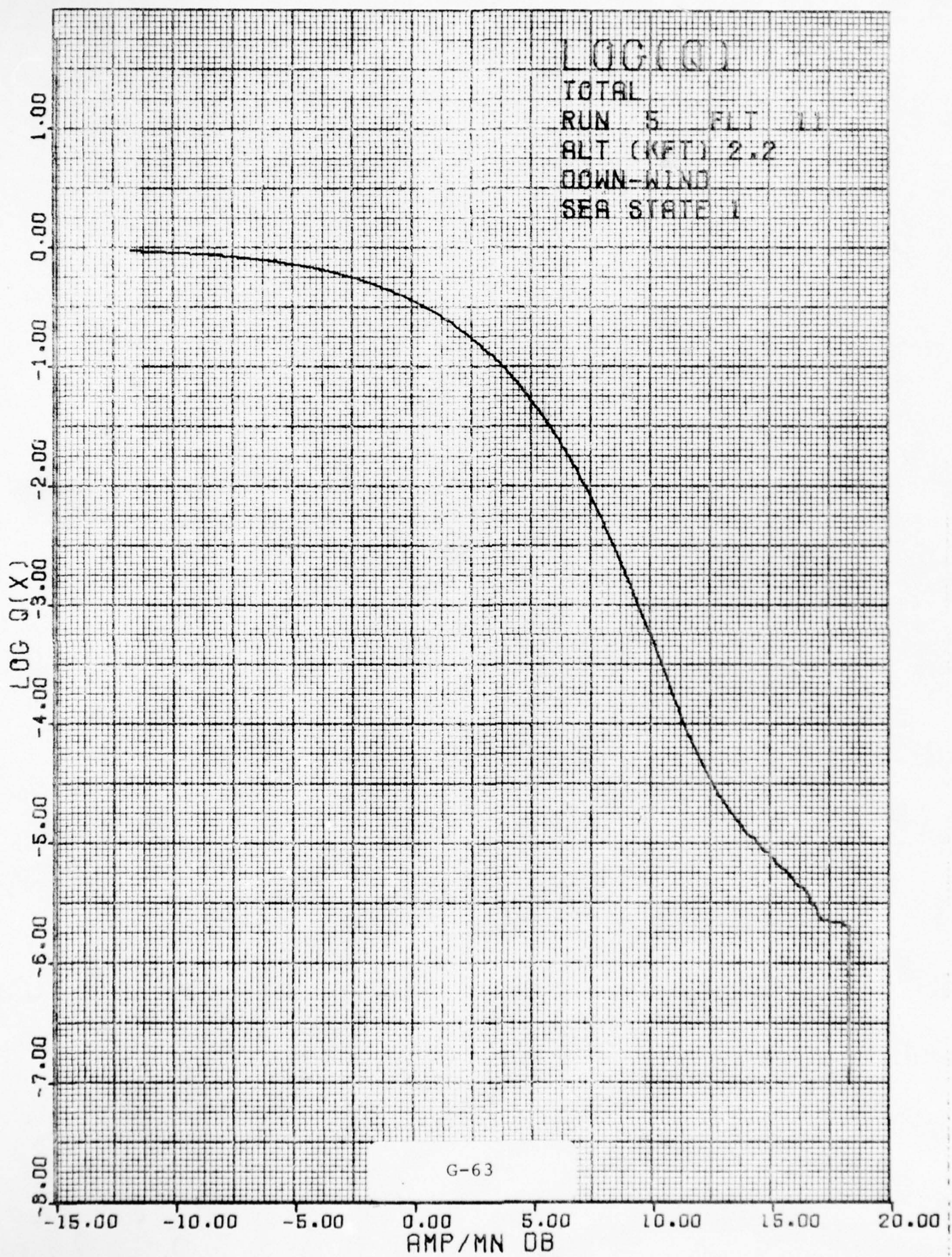
SEA STATE 1

LOG Q(X)

G-62

AMP/MN DB





LOG(Q)

TOTAL

RUN 7 FLT 11

ALT (KFT) 33

UP-WIND

SEA STATE 1

LOG Q(X)

G-64

AMP/MN DB

-5.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG(Q)

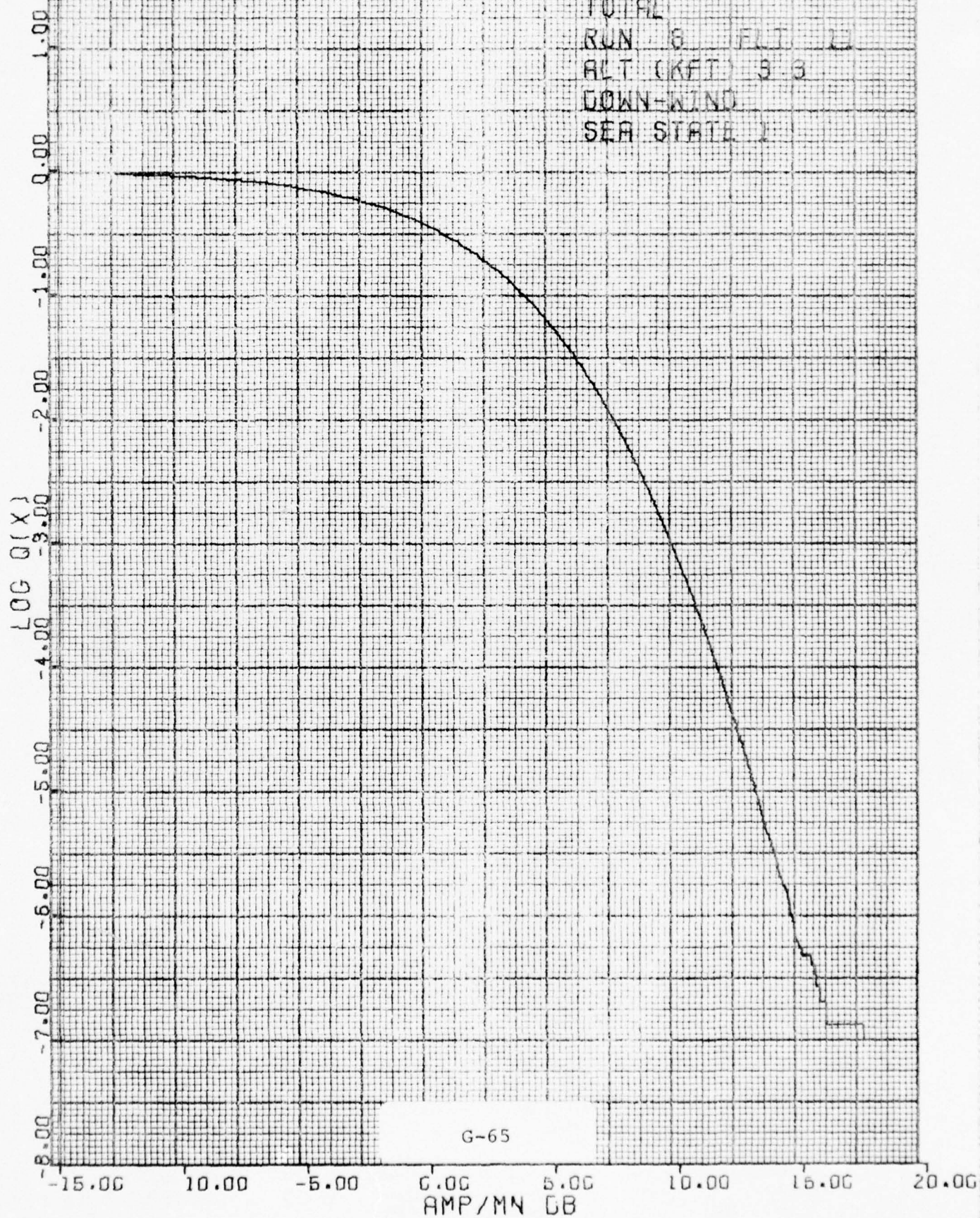
TOTAL

RUN 8 ALT 12

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 1



G-65

LOG(Q)

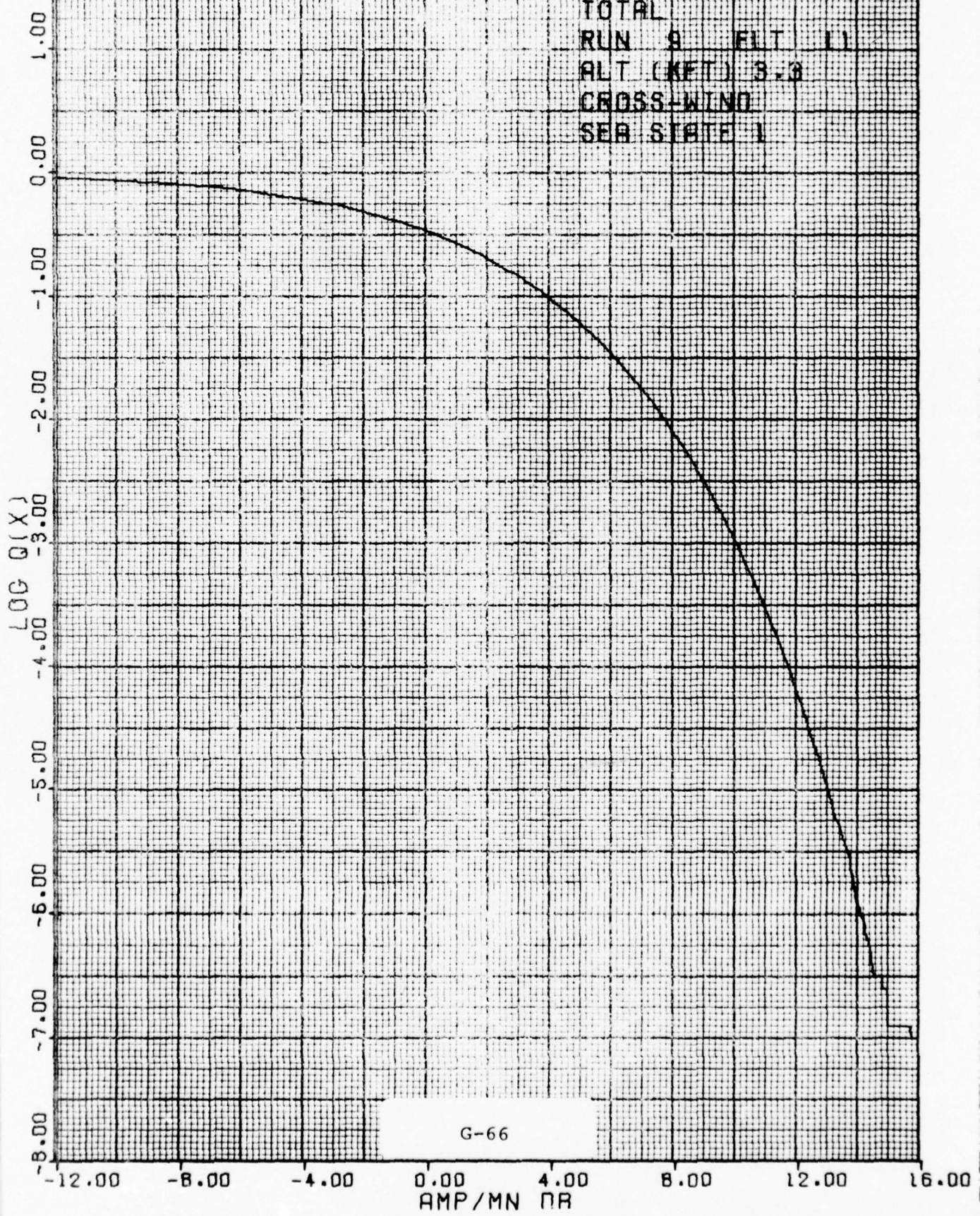
TOTAL

RUN 9 FLT 11

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 1



LOG(Q)

TOTAL

RUN 1 FLT 13

ALT (KFT) 1.1

UP-WIND

SEA STATE 4

LOG Q(X)

G-67

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-13.00 -9.00 -5.00 -1.00 3.00 7.00 11.00 15.00

LOG(Q)

TOTAL

RUN 2 FLT 16

ALT (KFT) 1.1

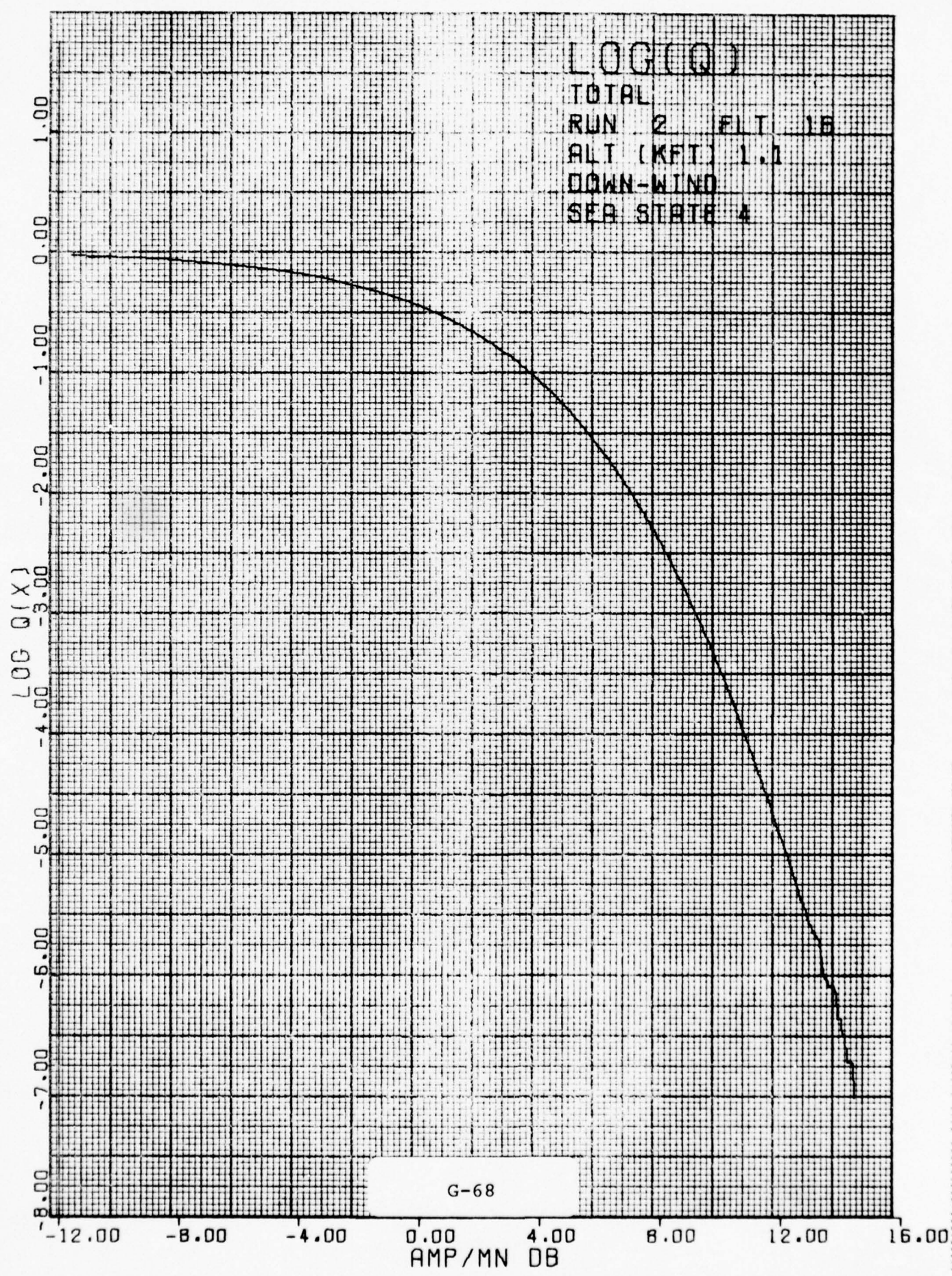
DOWN-WIND

SEA STATE 4

LOG Q(X)

G-68

AMP/MN DB



LOG(Q)

TOTAL

RUN 3 FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4

LOG Q(X)

G-69

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-13.00 -9.00 -5.00 -1.00 3.00 7.00 11.00 15.00

LOG(Q)

TOTAL

RUN 4 FLT 16

ALT (KFT) 2.2

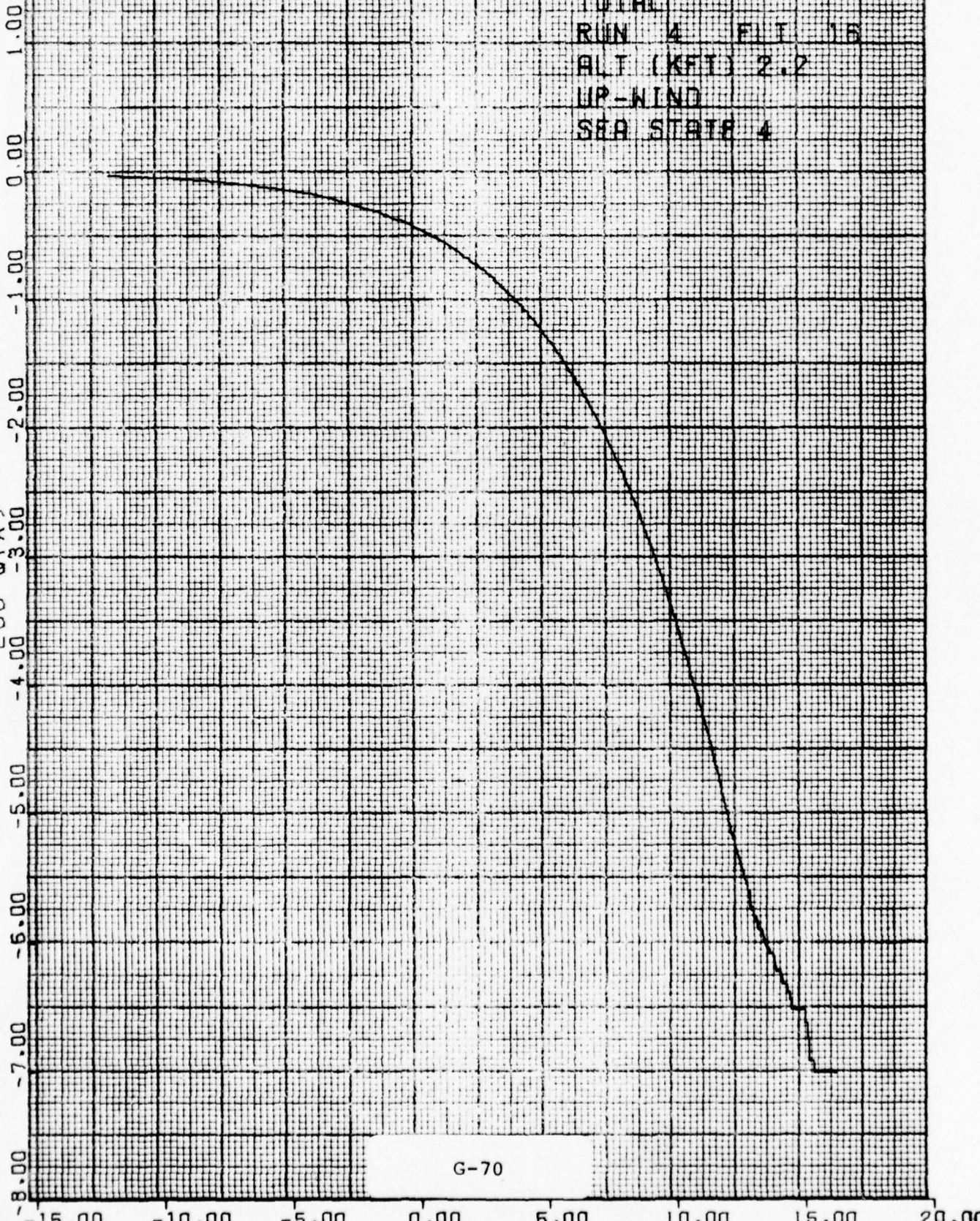
UP-WIND

SEA STATE 4

LOG Q(X)

G-70

AMP/MN DB



LOG(Q)

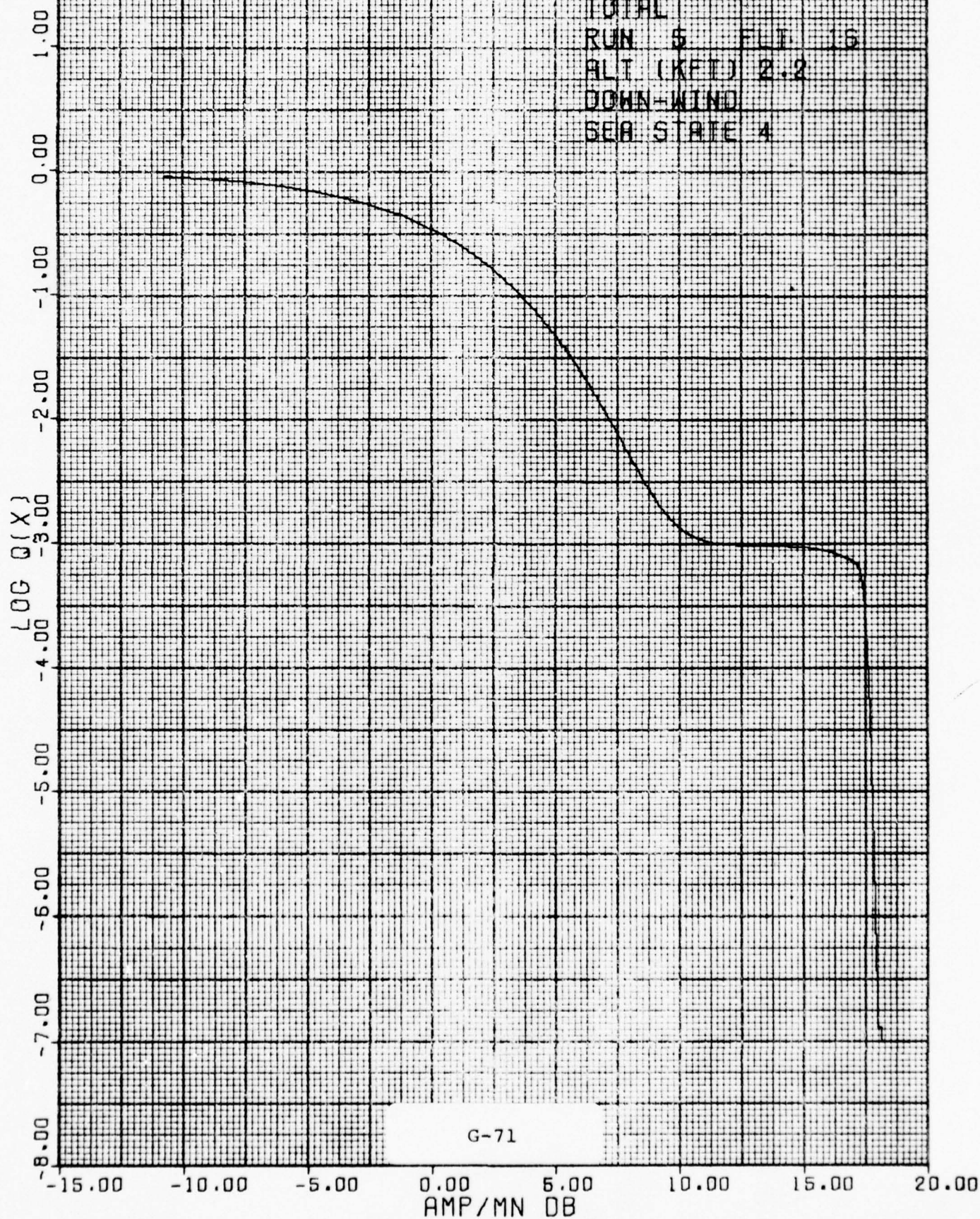
TOTAL

RUN 5 FLT 16

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4



G-71

LOG(Q)

TOTAL

RUN 8 FLI 15

ALT (KFT) 2.2

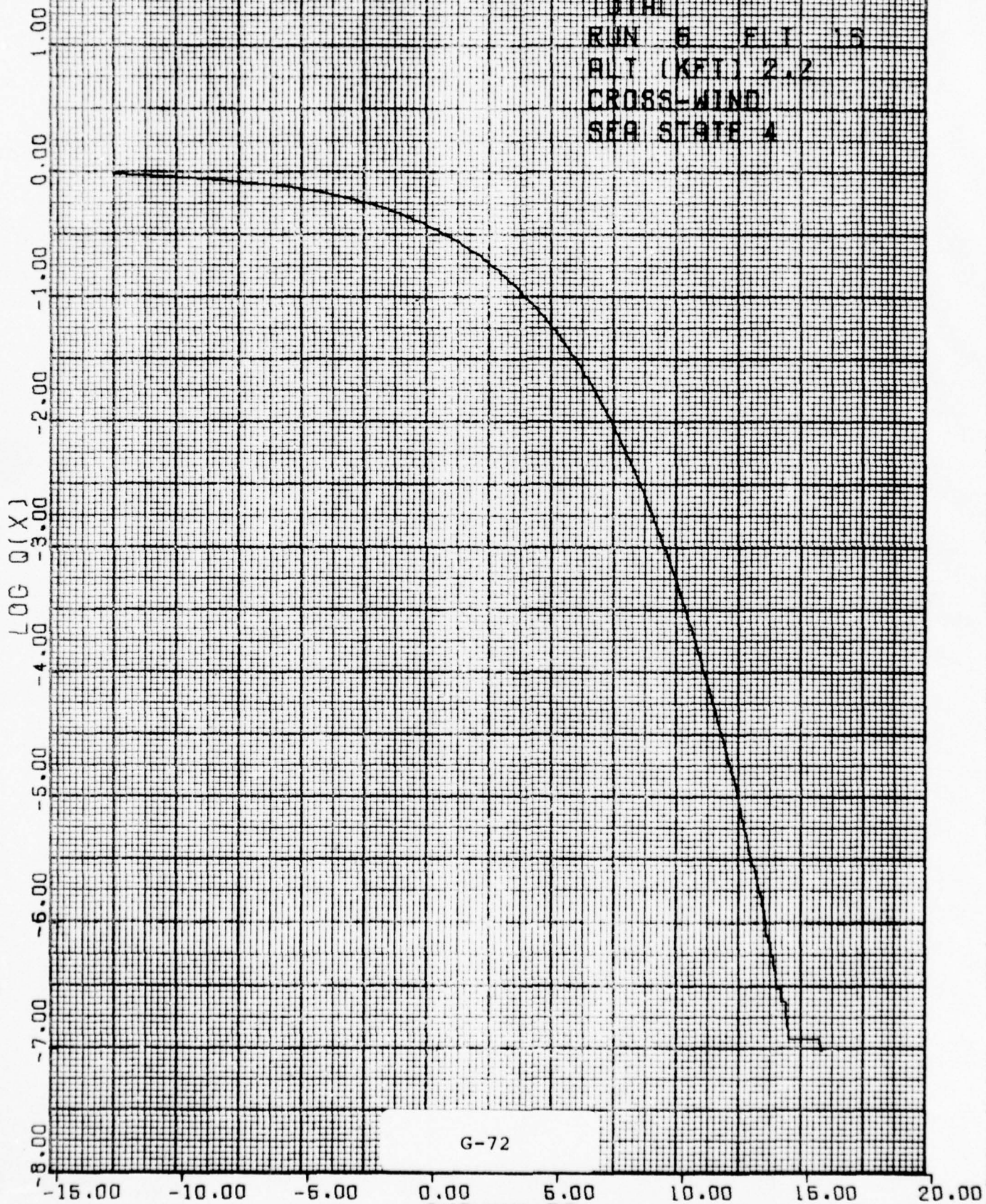
CROSS-WIND

SEA STATE 4

LOG Q(X)

G-72

AMP/MN DB



LOG(Q)

TOTAL

RUN 7 FLT 16

ALT (KFT) 3.3

UP-WIND

SEA STATE 4

LOG Q(X)

G-73

AMP/MN DB

1.00
0.00
-1.00
-2.00
-3.00
-4.00
-5.00
-6.00
-7.00
-8.00

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

LOG(Q)

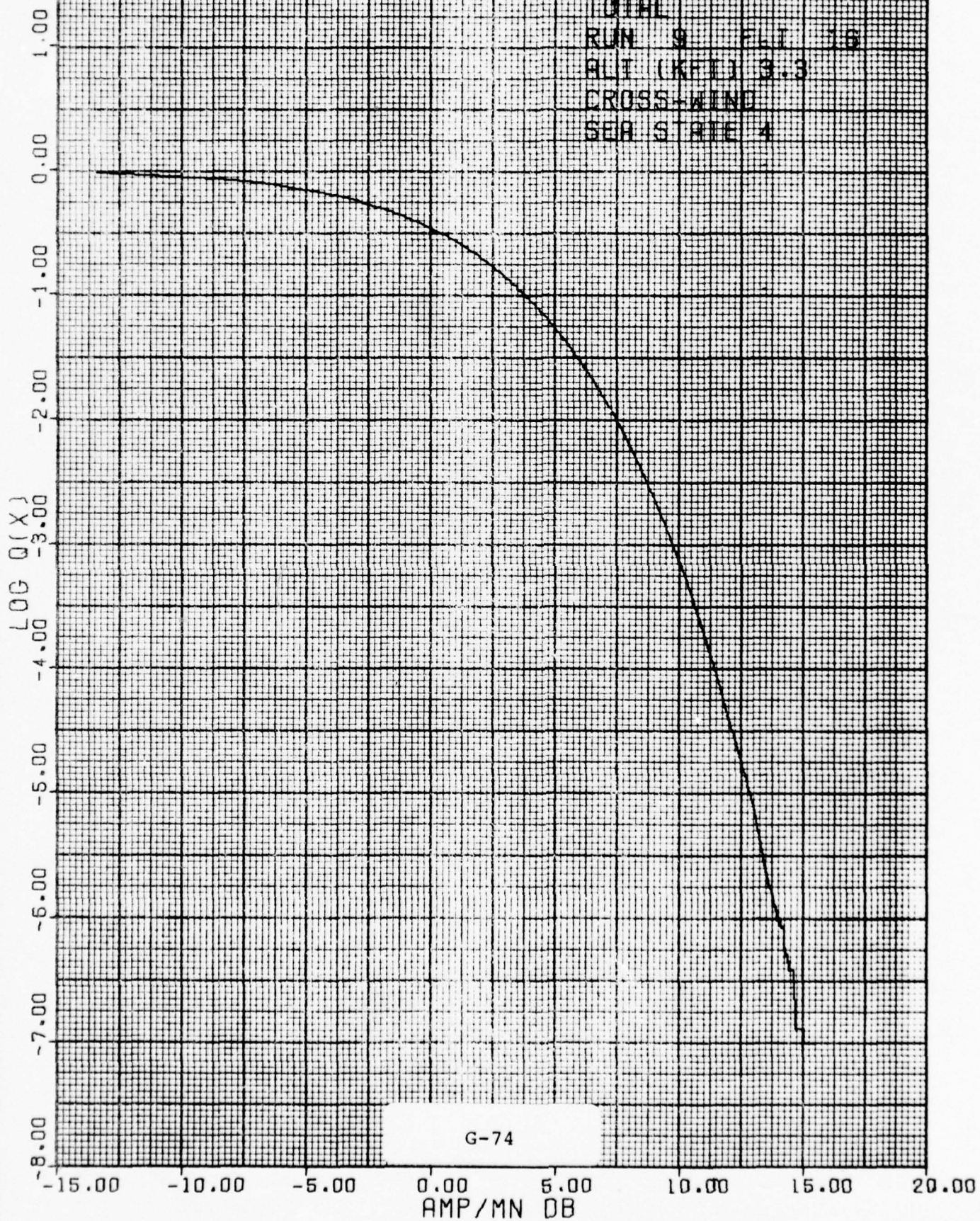
TOTAL

RUN 9 FLI 16

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4



G-74

LOG(Q)

TOTAL

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4

LOG Q(X)

1.00

0.00

-1.00

-2.00

-3.00

-4.00

-5.00

-6.00

-7.00

-8.00

G-75

-15.00

-10.00

-5.00

0.00

5.00

10.00

15.00

20.00

AMP/MN DB

LOG(Q)

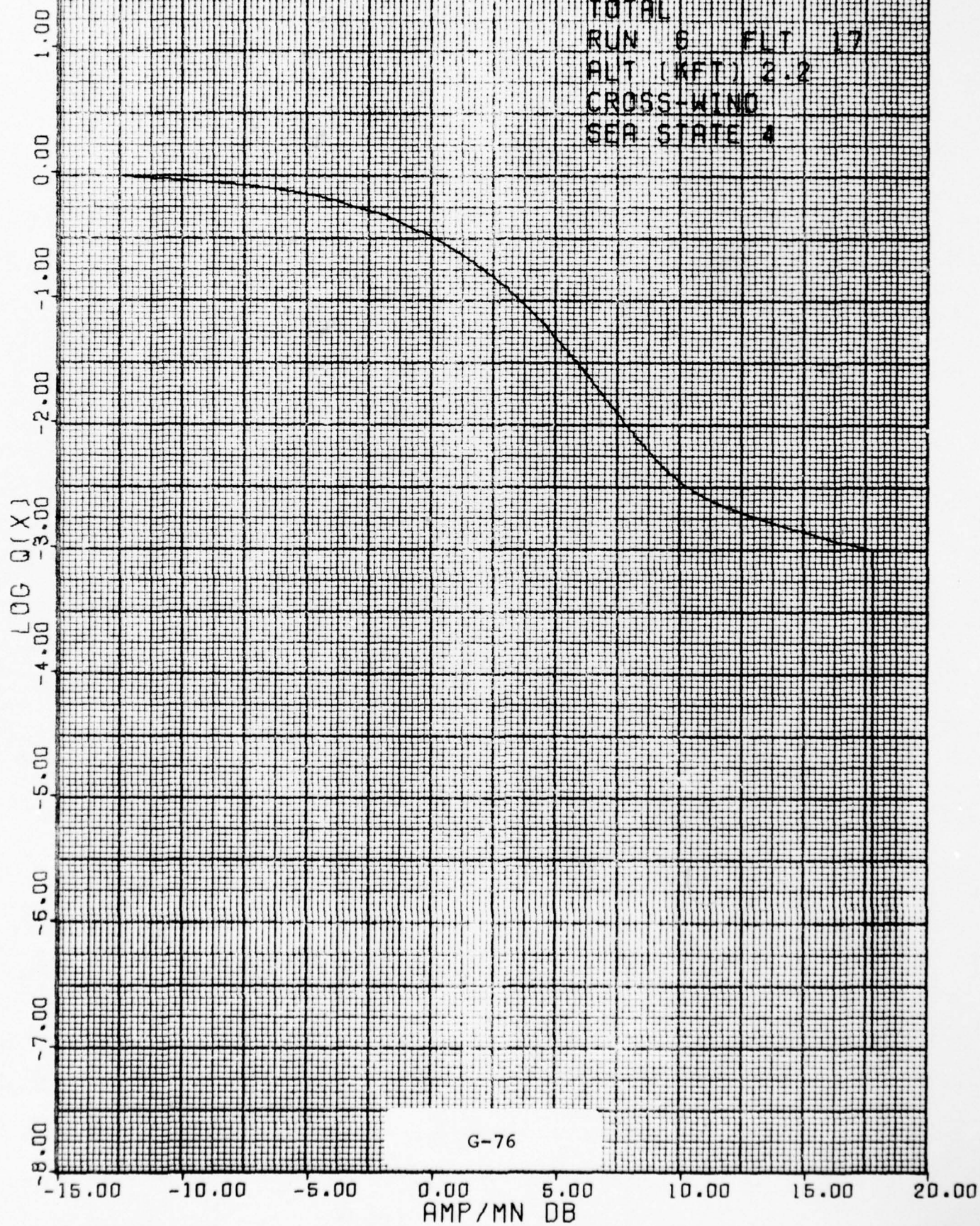
TOTAL

RUN 6 FLT 17

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



G-76

LOG(Q)

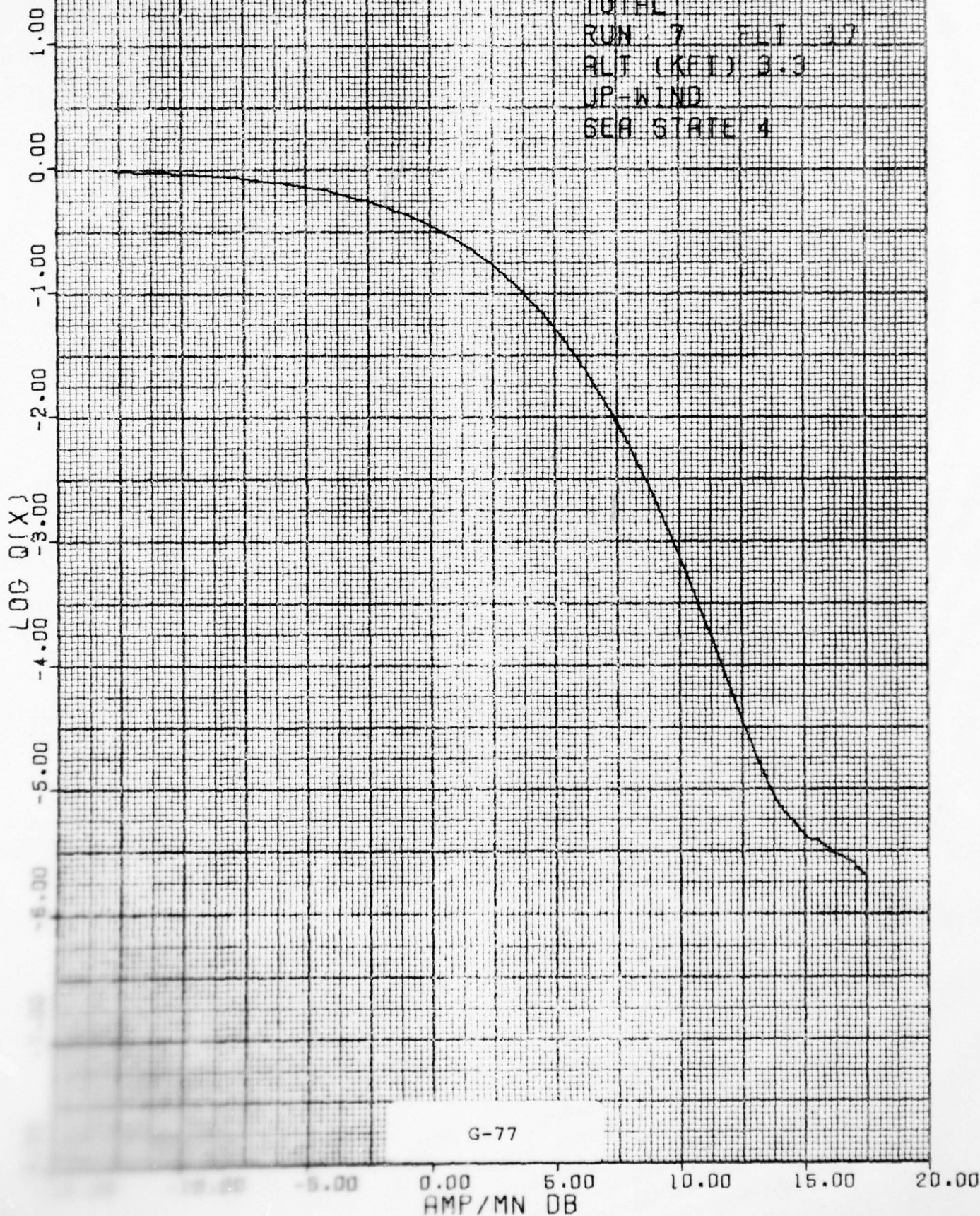
TOTAL

RUN 7 FLT 17

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



G-77

LOG(Q)

TOTAL

RUN 8 ELT 17

ALT (KFT) 3.3

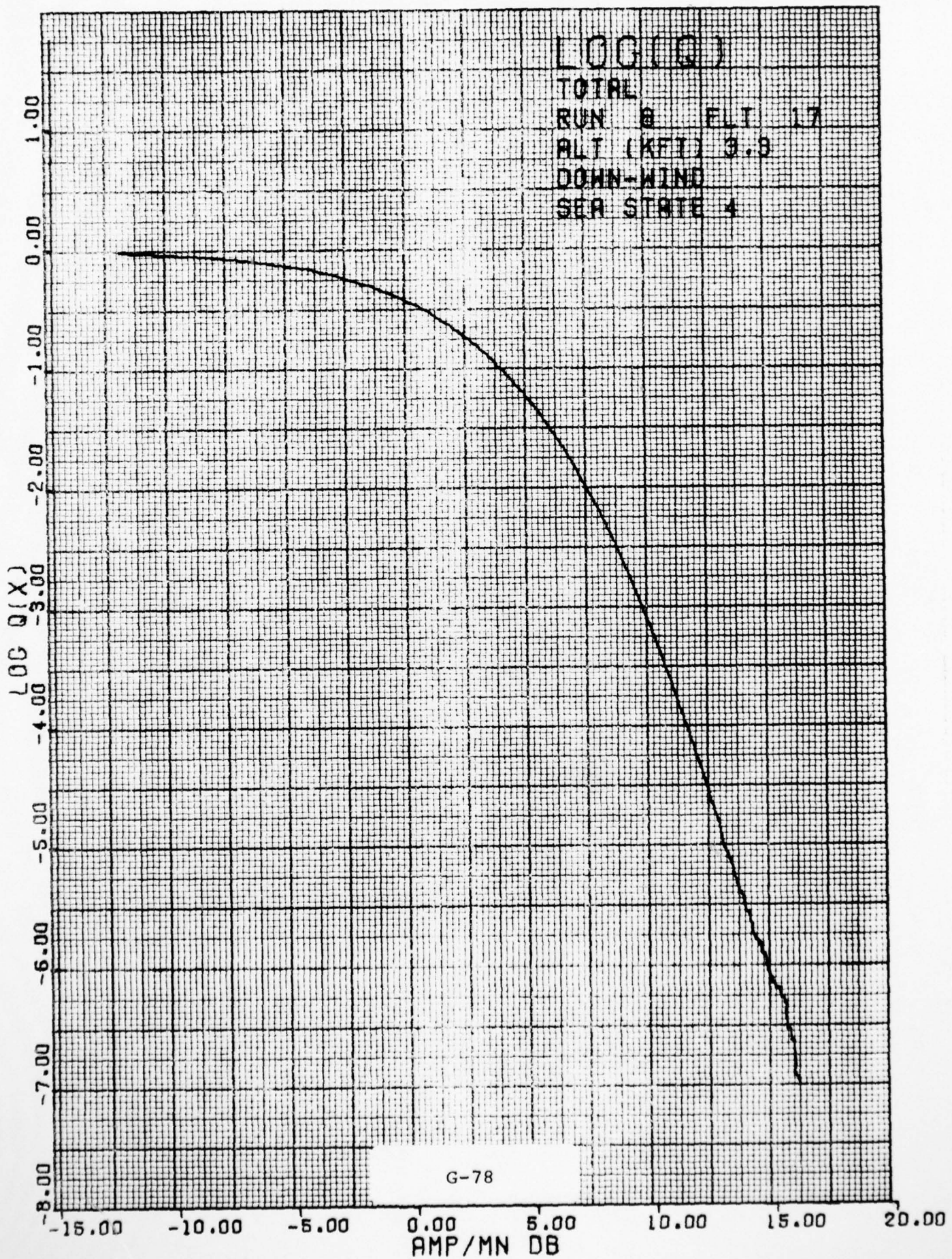
DOWN-WIND

SEA STATE 4

LOG Q(X)

G-78

AMP/MN DB



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1.1.3 Histogram TOTAL A WEIBULL

All valid clutter data for each run is included. The suffix (A) after TOTAL indicates the histograms were first combined into range gate histograms then normalized by the range gate mean. These range gate mean histograms were then combined to form the total histogram. "A" normalization removes most hardware biases in the data. The vertical axis of the Weibull plot is, $\ln \left(\ln \left(\frac{1}{1-P_x} \right) \right)$ where P_x is the cumulative probability function. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

WEIBULL

TOTAL-A

RUN 1 FLT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3

LN/LN/Q(X)

1.70

1.20

0.70

0.20

-0.30

-0.80

-1.30

-1.80

-2.30

-2.80

G-80

-10.00

-6.00

-2.00

2.00

6.00

10.00

14.00

18.00

AMP/MN DB

WEIBULL

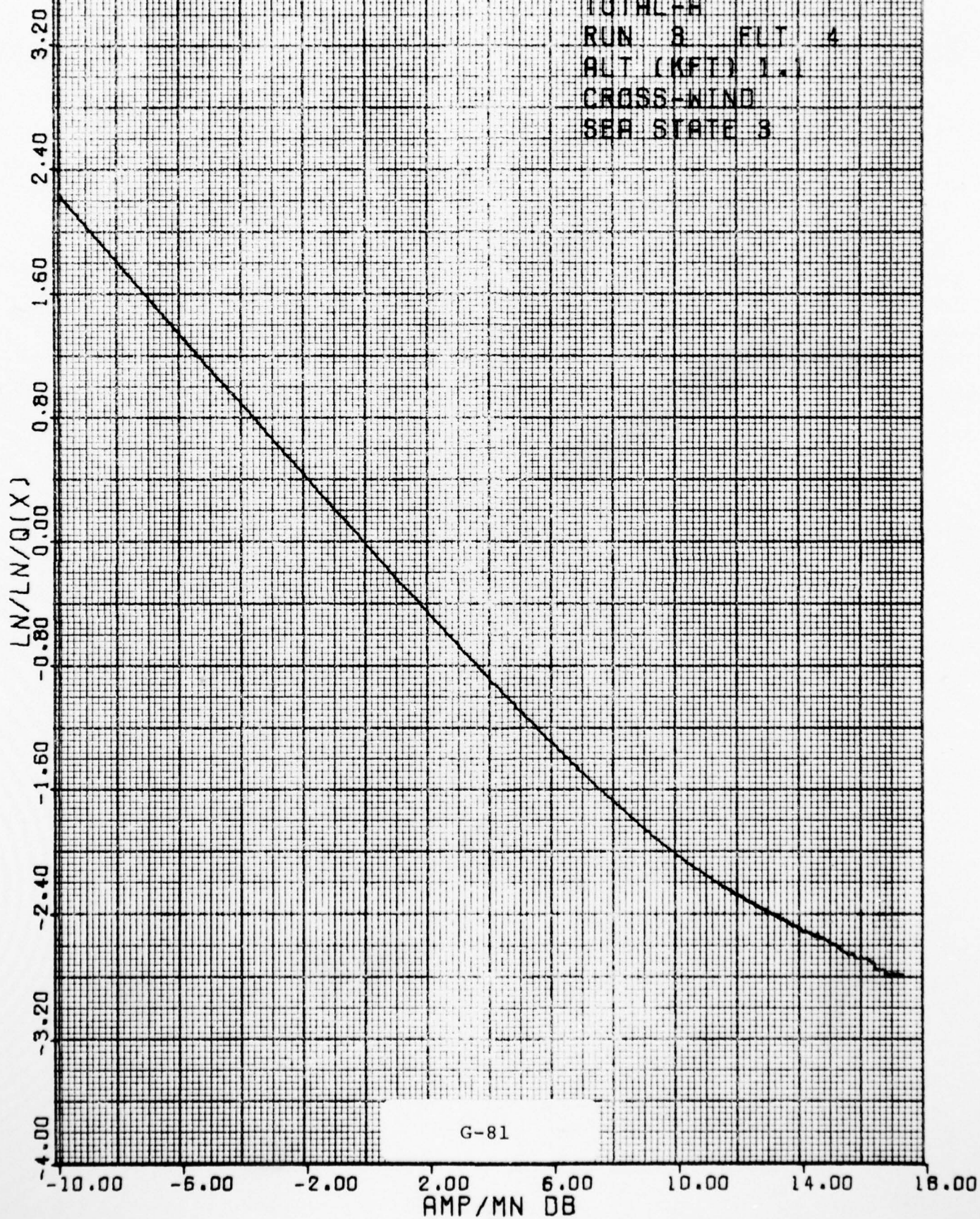
TOTAL-A

RUN 8 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



WEIBULL

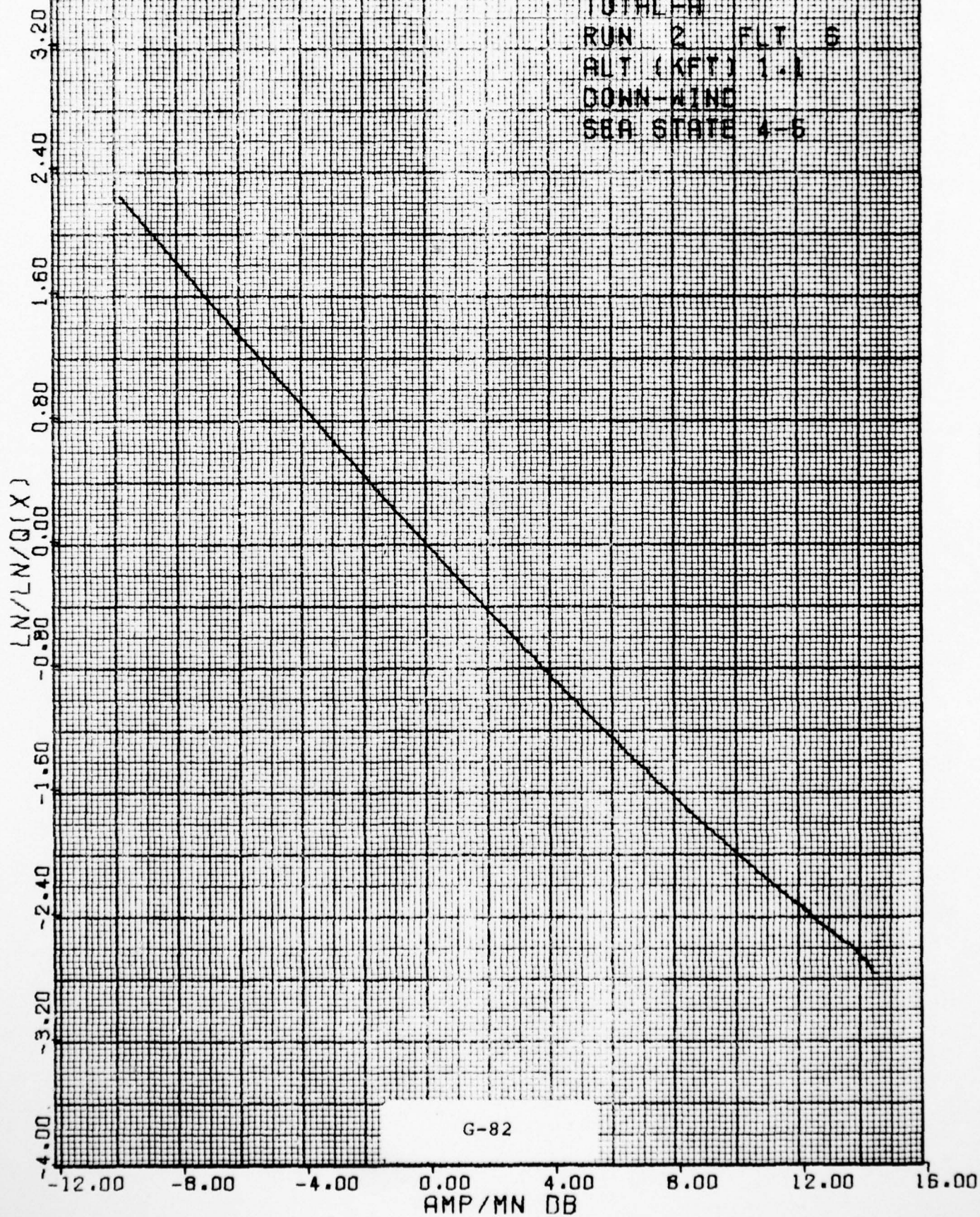
TOTAL-A

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5



G-82

WEIBULL

TOTAL-R

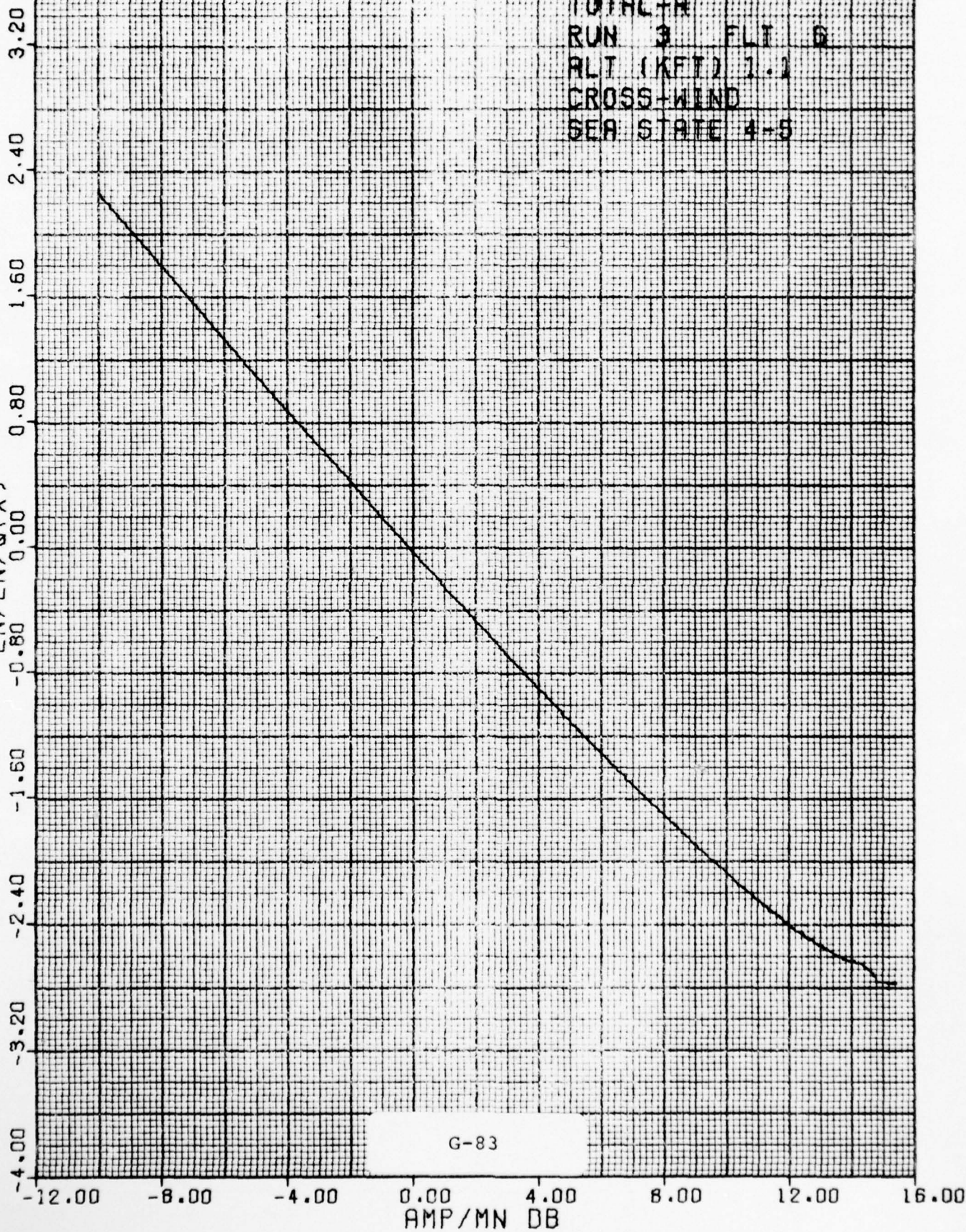
RUN 3 FLT 6

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4-5

$\ln/\ln/Q(X)$



WEIBULL

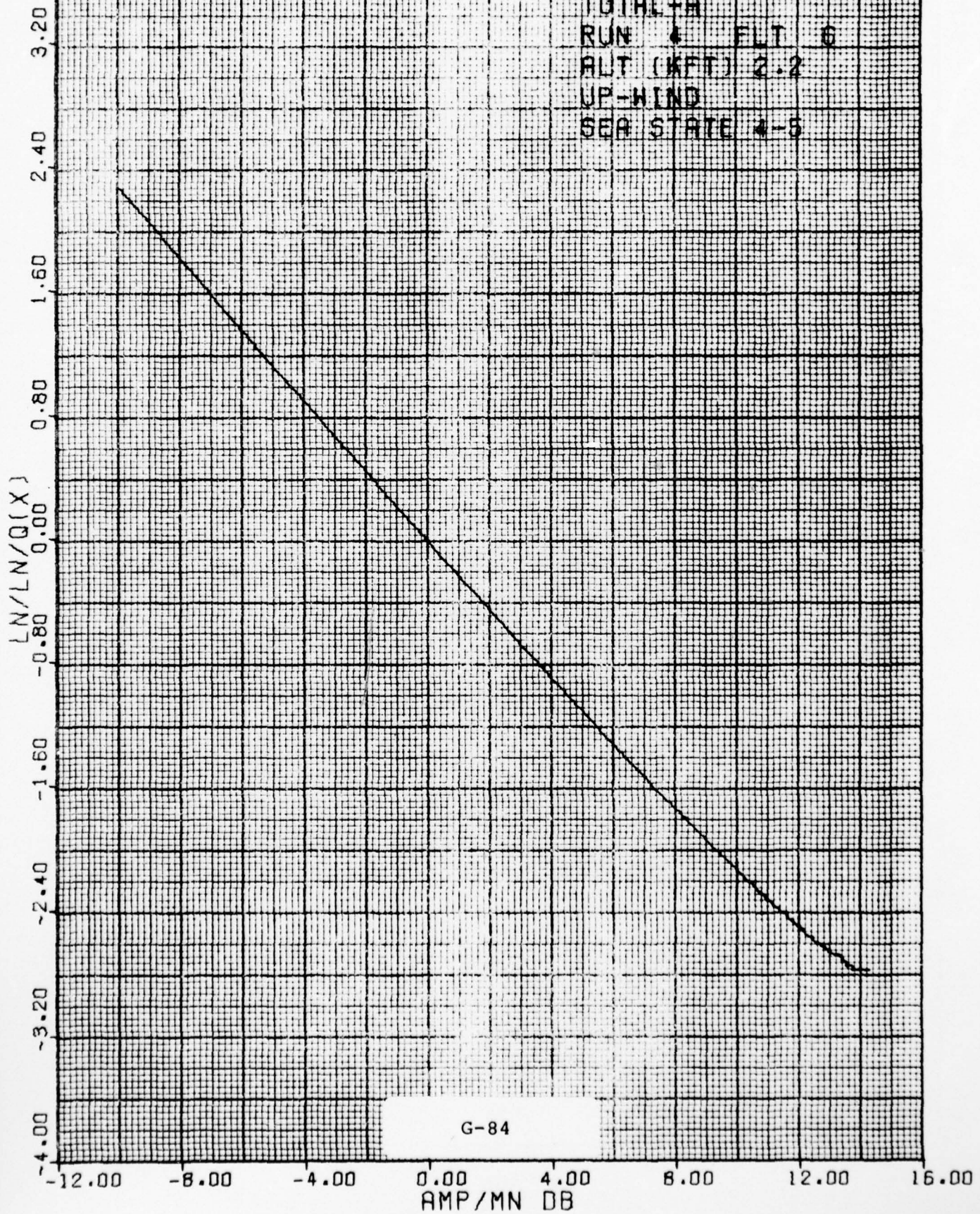
TOTAL-A

RUN 4 FLT 6

ALT (KFT) 2.2

UP-WIND

SEA STATE 4-5



WEIBULL

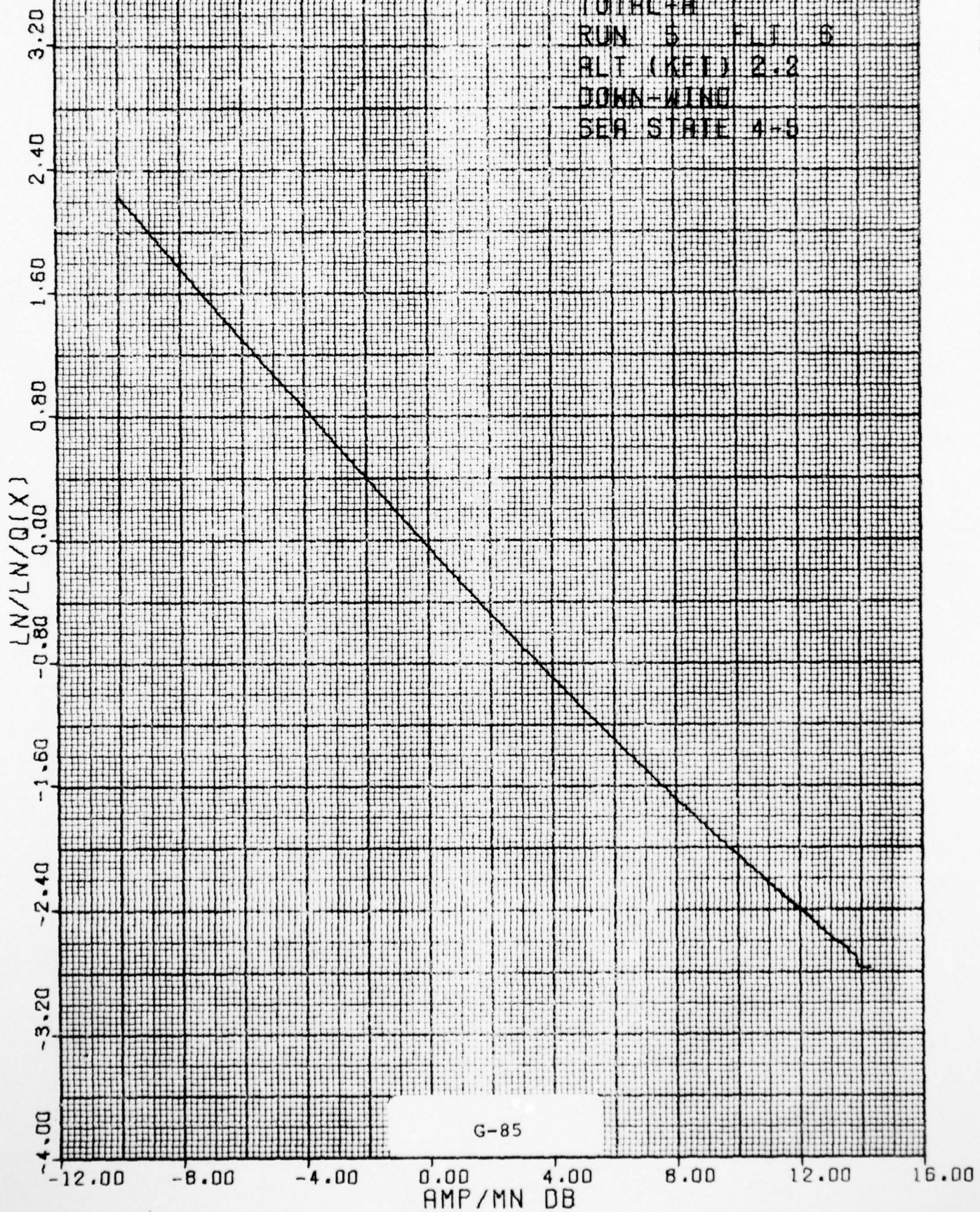
TOTAL-R

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



WEIBULL

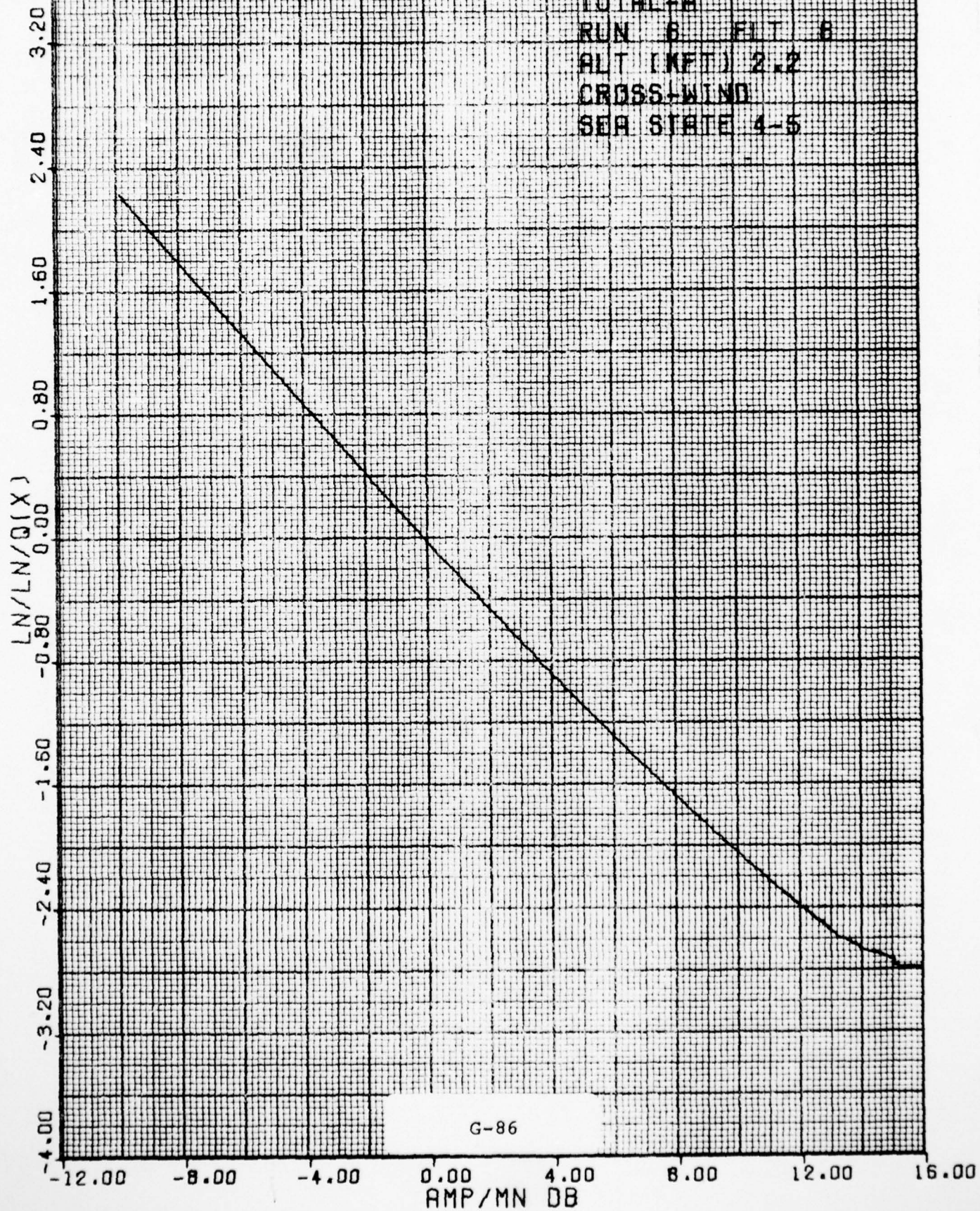
TOTAL-R

RUN 6 FLT 6

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4-5



WEIBULL

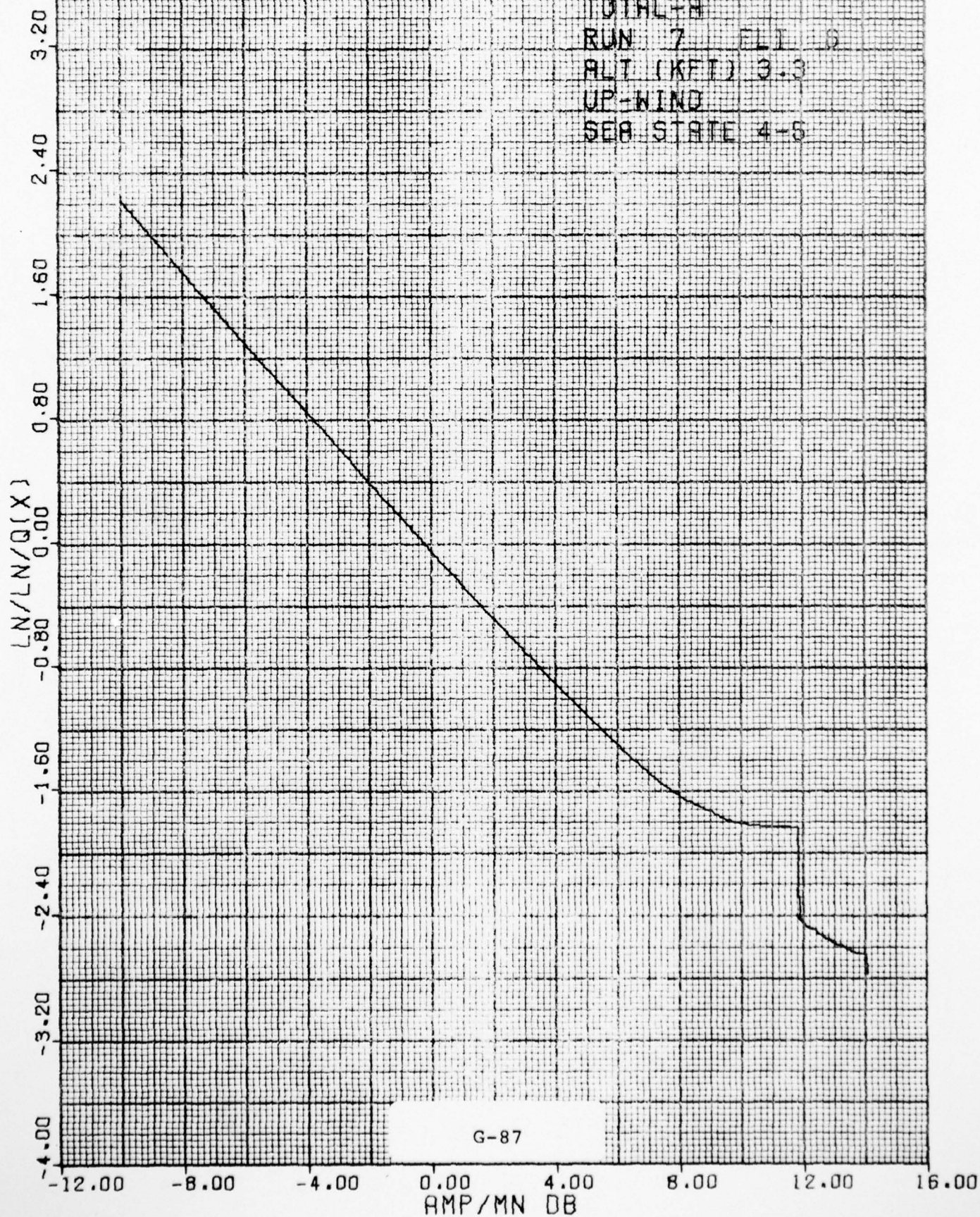
TOTAL-R

RUN 7 ELI 9

ALT (KFT) 3.3

UP-WIND

SEA STATE 4-5



WEIBULL

TOTAL-R

RUN 0 FLT 6

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4-5

$\frac{LN}{LN/Q(X)}$

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-88

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00
AMP/MN DB

WEIBULL

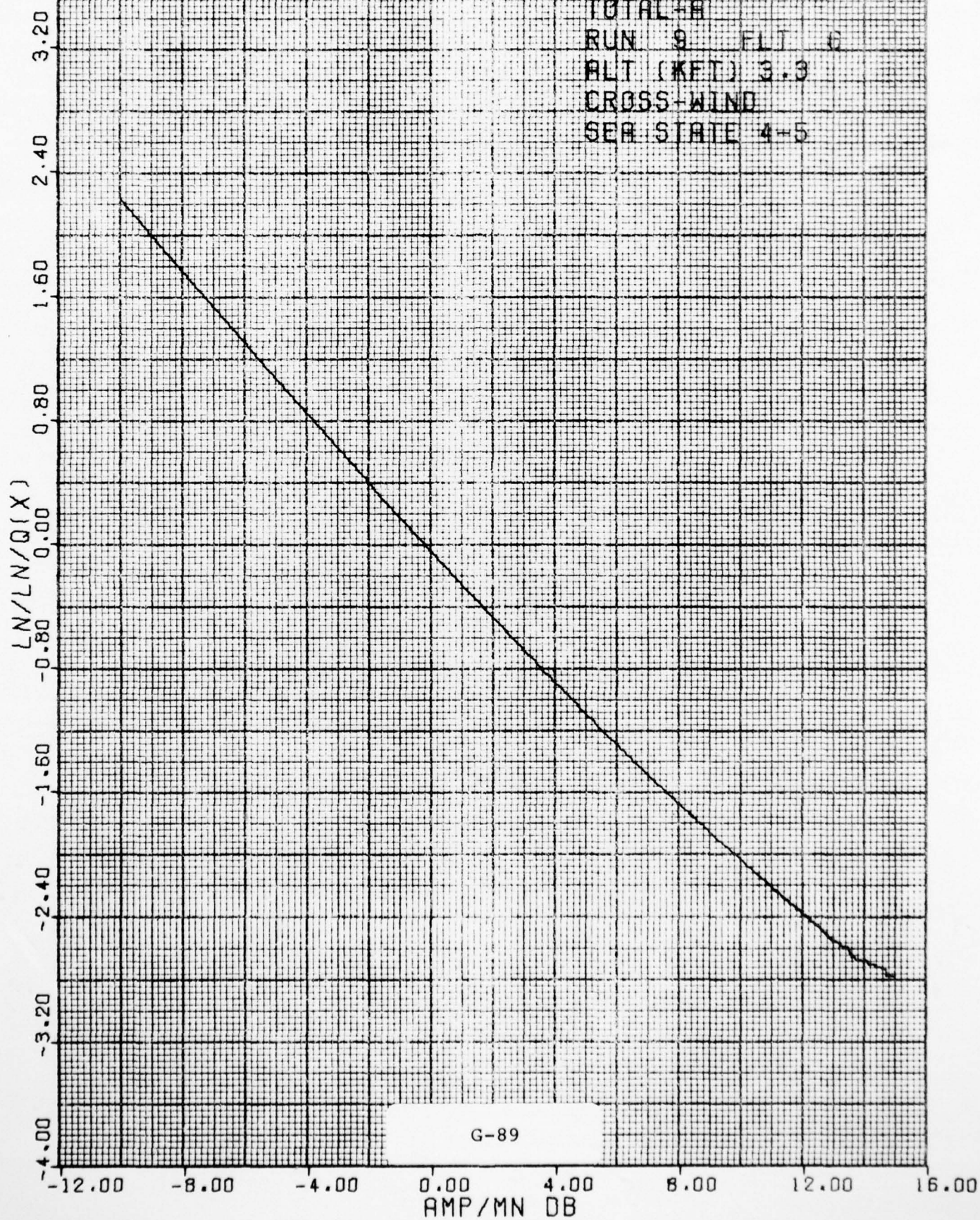
TOTAL-R

RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5



WEIBULL

TOTAL-A

RUN 1 FLT 7

ALT (KFT) 1.1

UP-WIND

SEA STATE 5

$LN/LN/Q(X)$

3.20

2.40

1.60

0.80

0.00

-0.80

-1.60

-2.40

-3.20

-4.00

-10.00

-5.00

0.00

5.00

10.00

15.00

20.00

25.00

AMP/MN DB

G-90

AD-A036 974

GENERAL DYNAMICS/POMONA CALIF POMONA DIV
TAGSEA PROGRAM. VOLUME IV. STANDARD CLUTTER ANALYSIS OUTPUTS.(U)
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2 of 6
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WEIBULL

TOTAL-A

RUN 2 FLT 7

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 5

$LN/LN/Q(X)$

3.20

2.40

1.60

0.80

0.00

-0.80

-1.60

-2.40

-3.20

-4.00

-10.00

-5.00

0.00

5.00

10.00

15.00

20.00

25.00

AMP/MN OR

G-91

WEIBULL

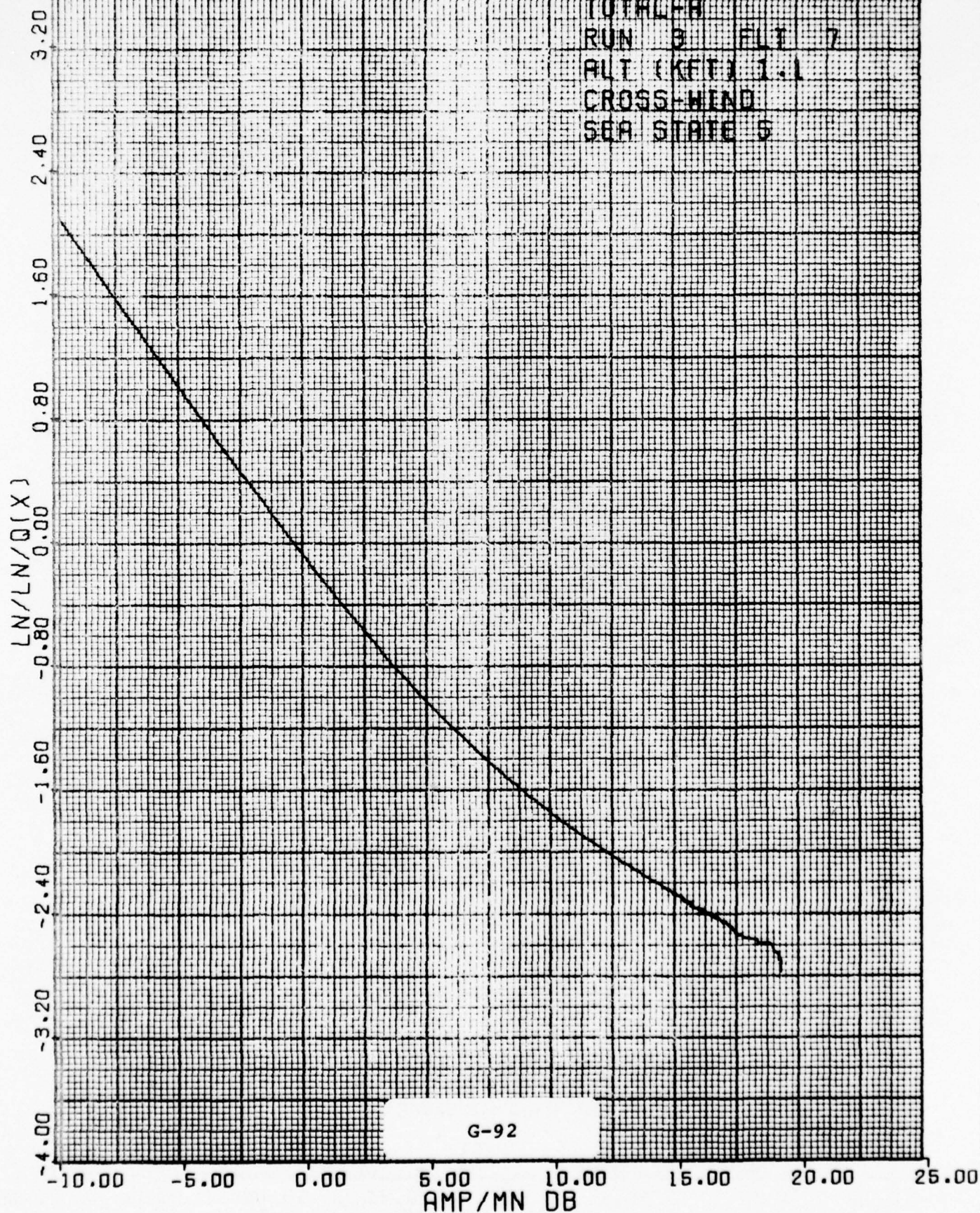
TOTAL-R

RUN 3 FLT 7

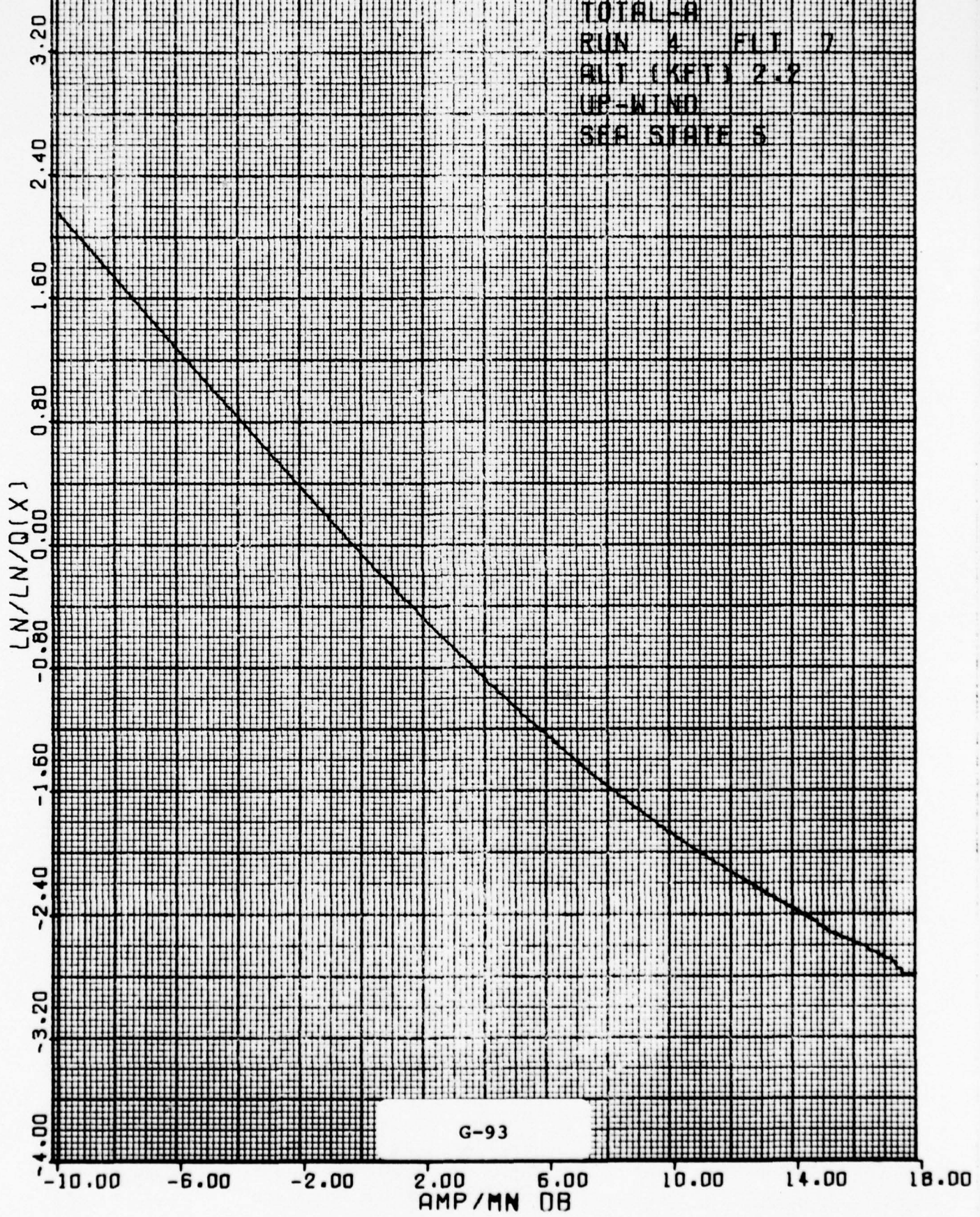
ALT (KFT) 1.1

CROSS-WIND

SEA STATE 5



WEIBULL
TOTAL-A
RUN 4 FLT 7
ALT (KFT) 2.2
UP-WIND
SEA STATE 5



WEIBULL

TOTAL-R

RUN 5 FLT 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5

$LN/LN/Q(X)$

1.70
1.20
0.70
0.20
-0.30
-0.80
-1.30
-1.80
-2.30
-2.80

G-94

-10.00 -6.00 0.00 5.00 10.00 15.00 20.00 25.00
AMP/MN DB

WEIBULL

TOTAL-A

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5

$LN/LN/Q(X)$

1.70

1.20

0.70

0.20

-0.30

-0.80

-1.30

-1.80

-2.30

-2.80

G-95

-10.00

-6.00

-2.00

2.00

6.00

10.00

14.00

18.00

AMP/MN OR

WE T BUI 1

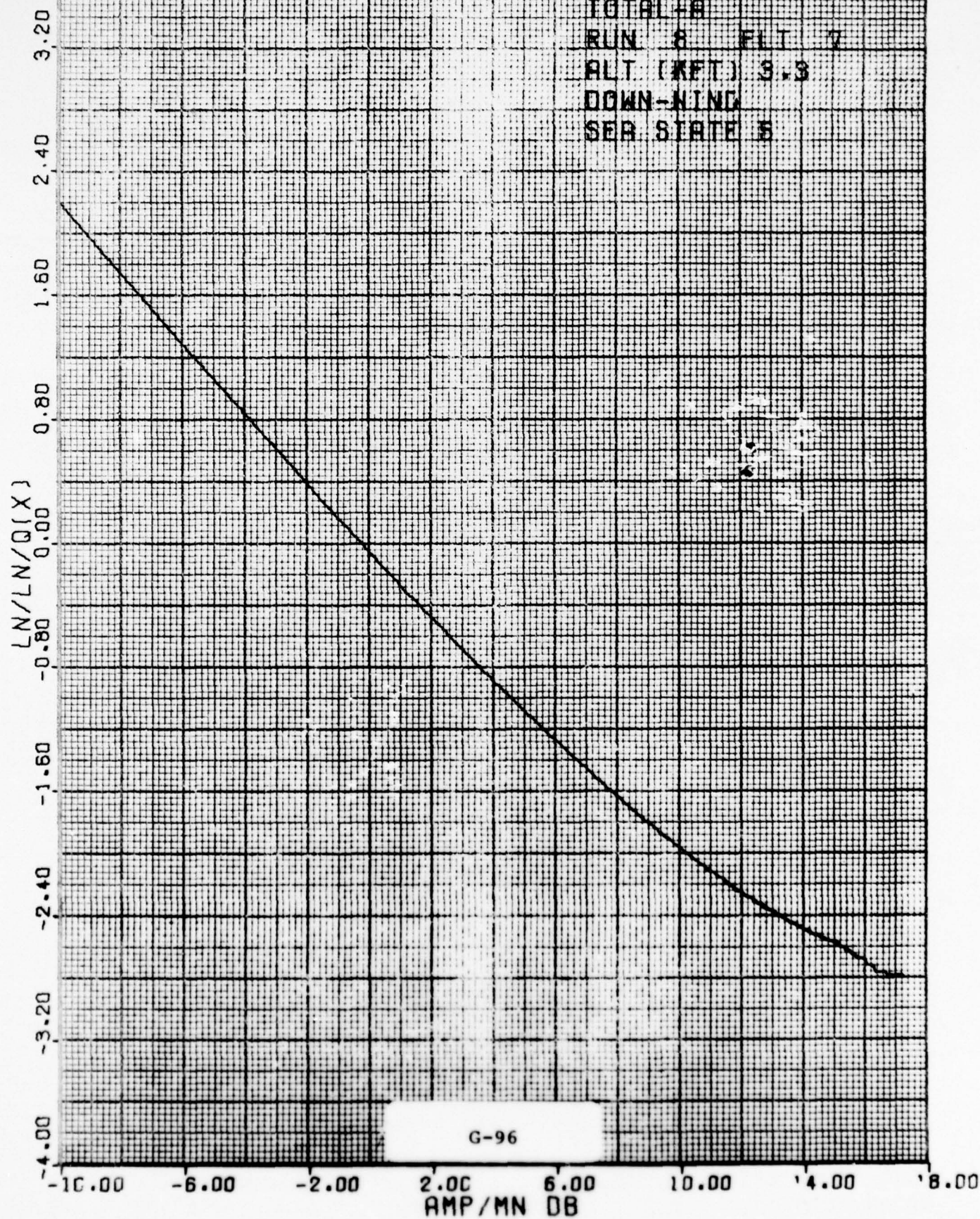
TOTAL - 8

RUN 8 FLT 7

ALT (KFT) 3.3

DOWN-ING

SEA STATE 5



WEIBULL

TOTAL-R

RUN 9 FLT 7

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 8

$\ln/\ln Q(X)$

G-97

AMP/MN DB

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

-10.00 -5.00 0.00 5.00 10.00 15.00 20.00 25.00

WEIBULL

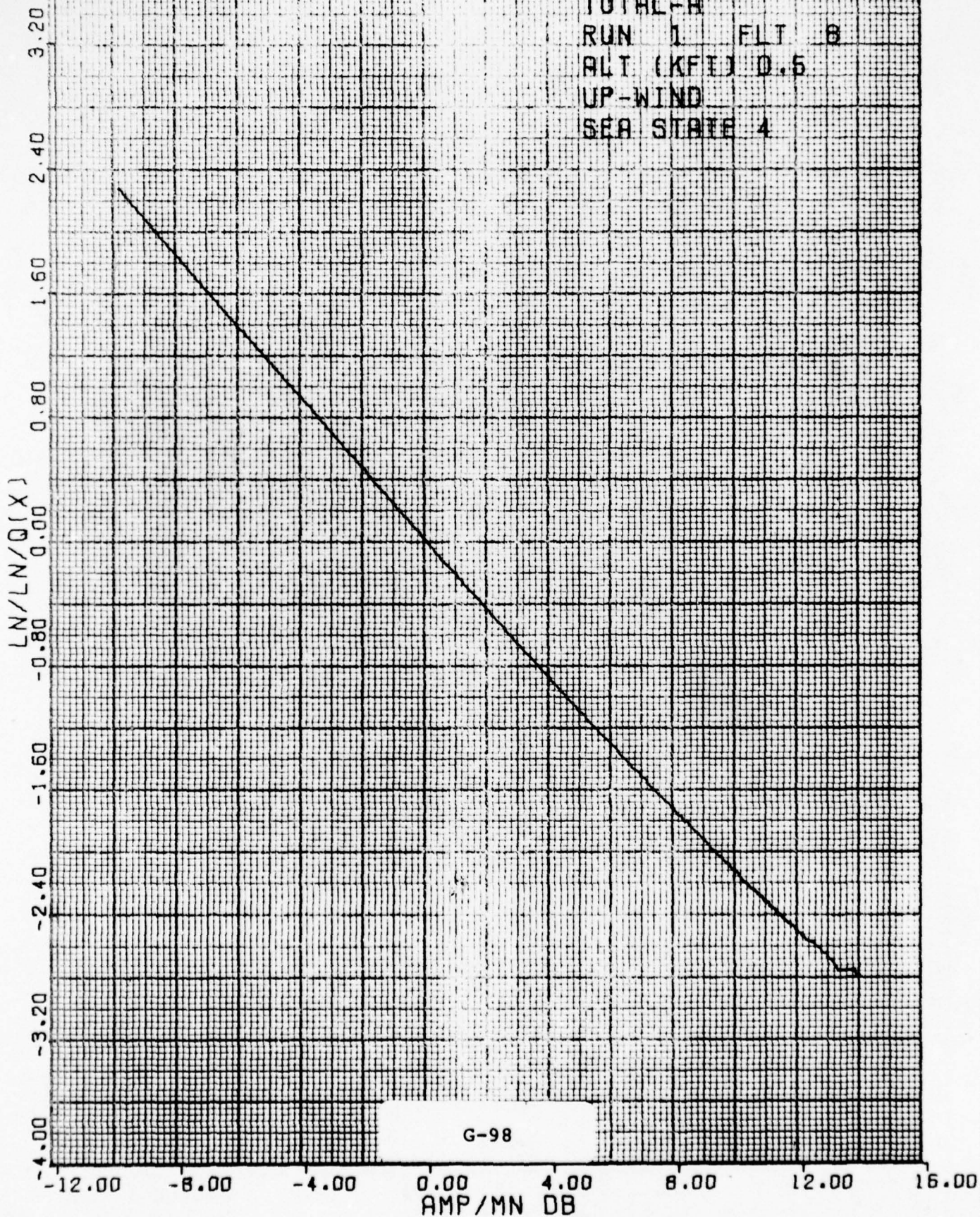
TOTAL-R

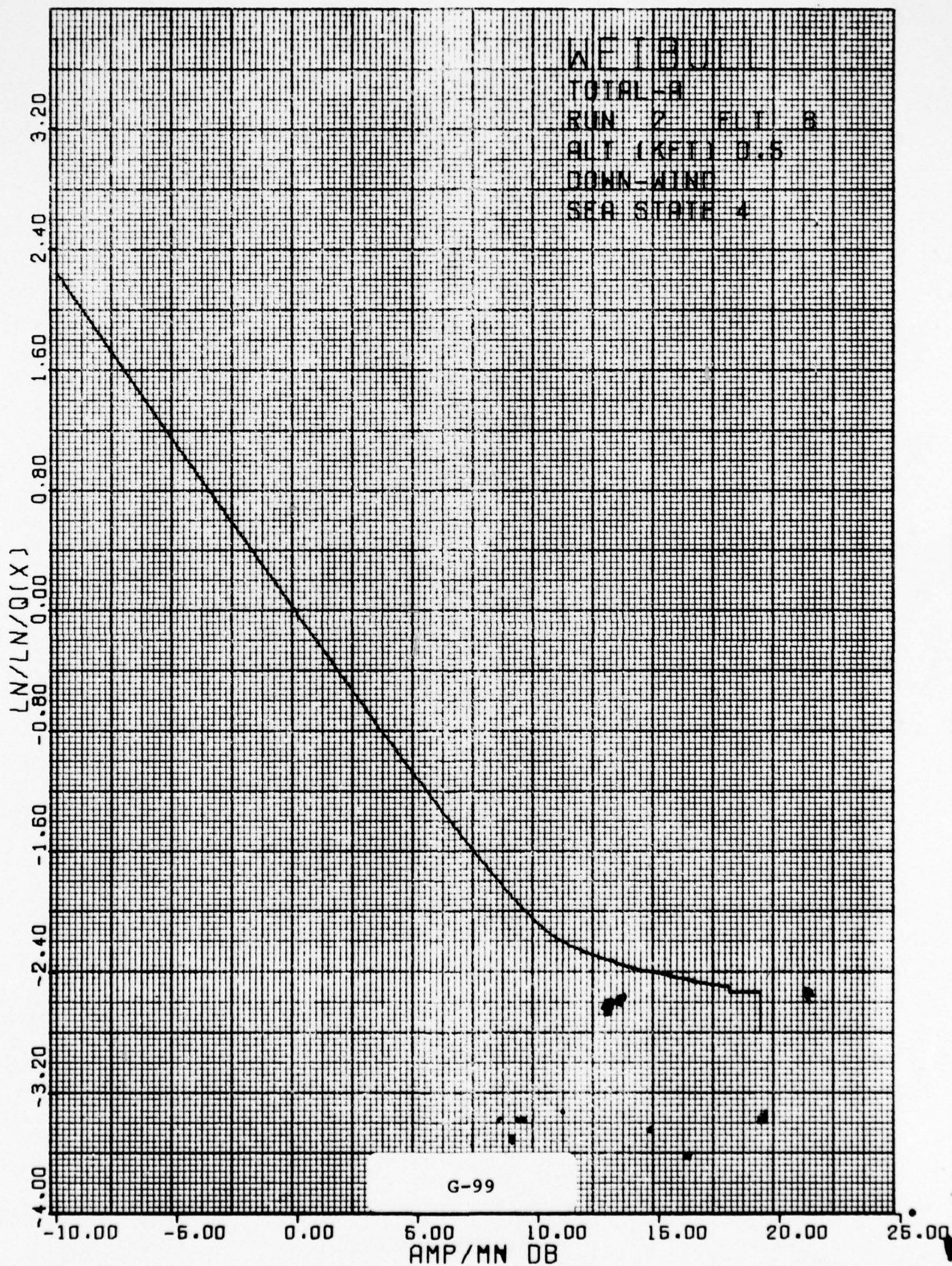
RUN 1 FLT 8

ALT (KFT) 0.5

UP-WIND

SEA STATE 4





WEIBULL

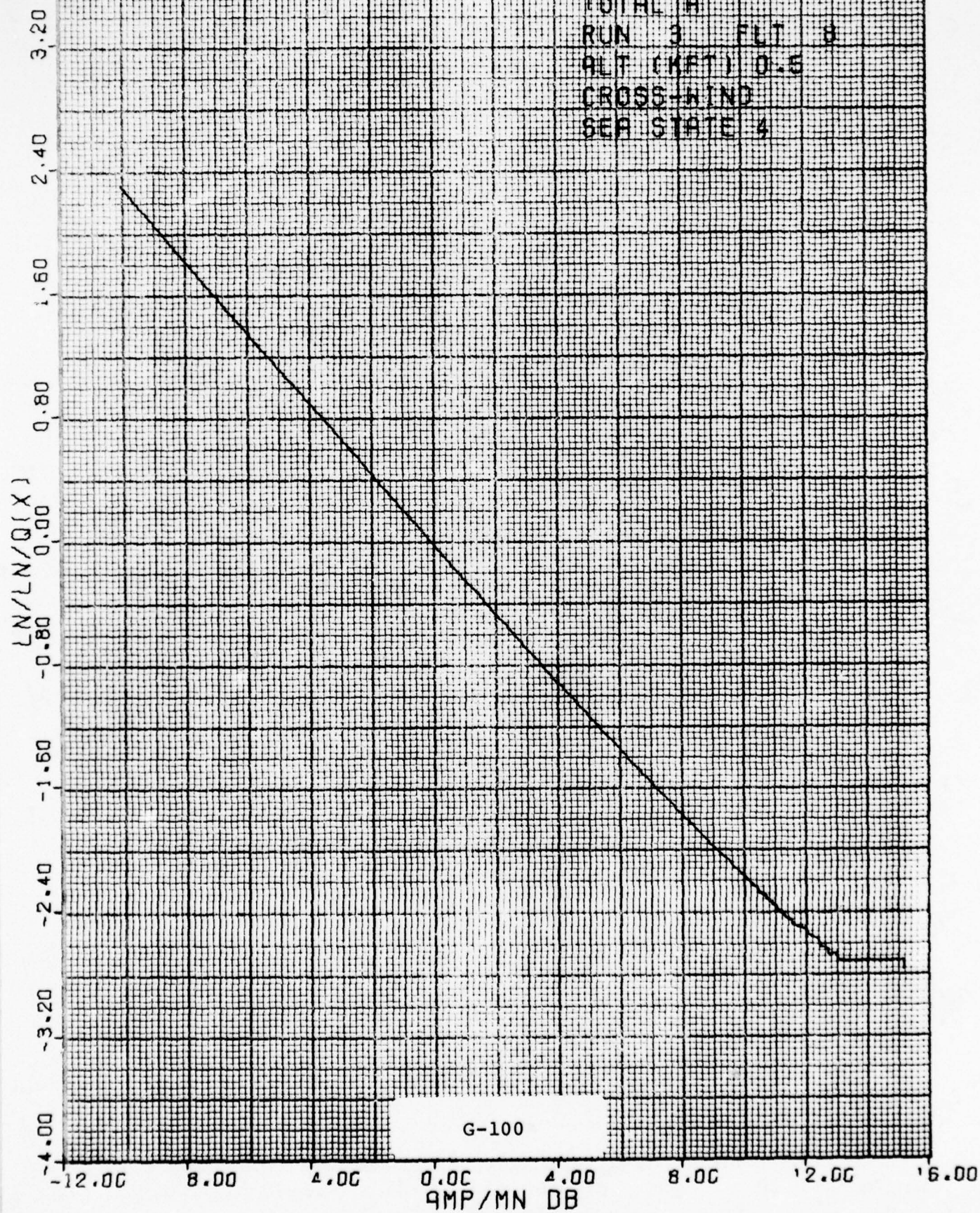
TOTAL A

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



WEIBULL

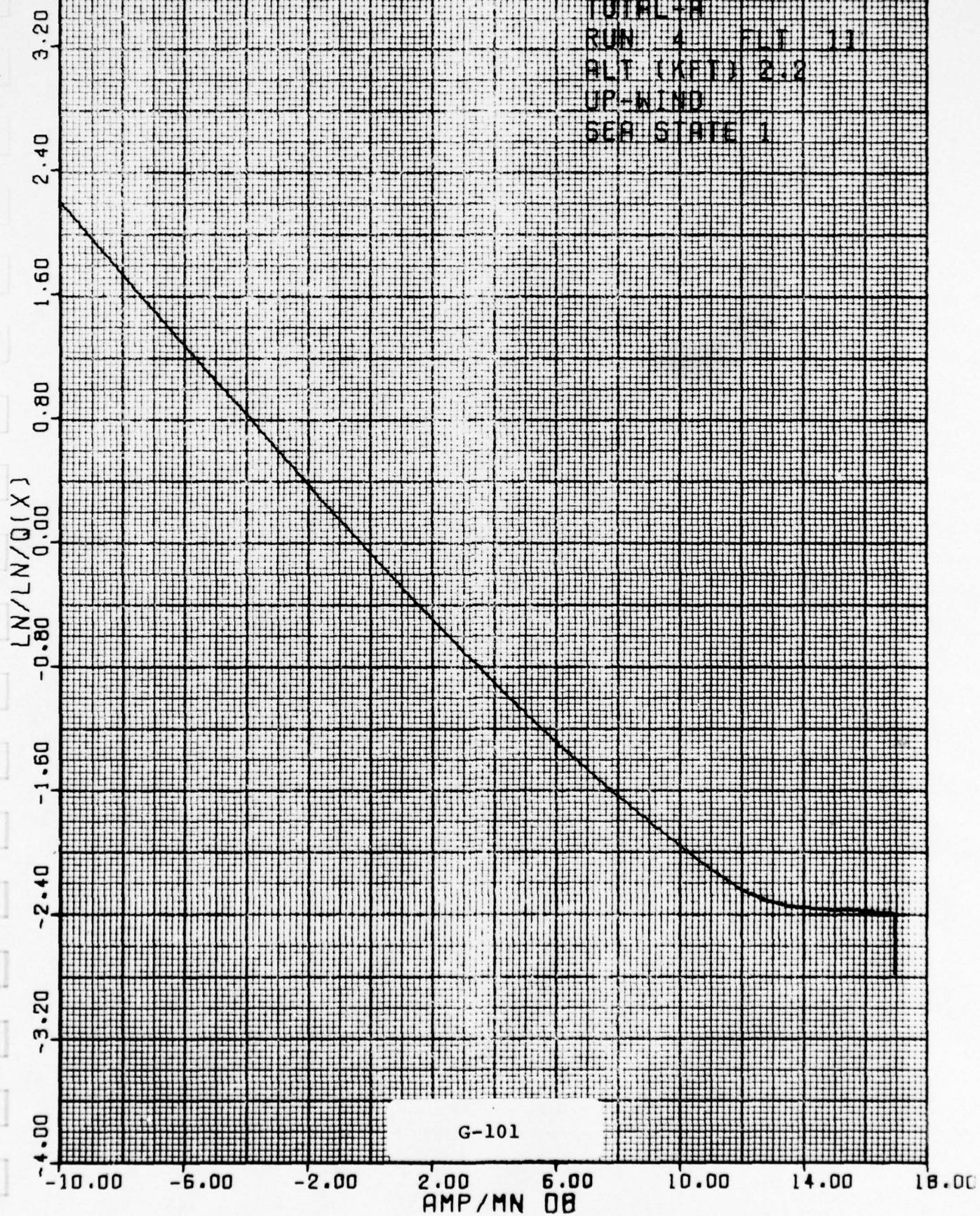
TOTAL-R

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1



WEIBULL

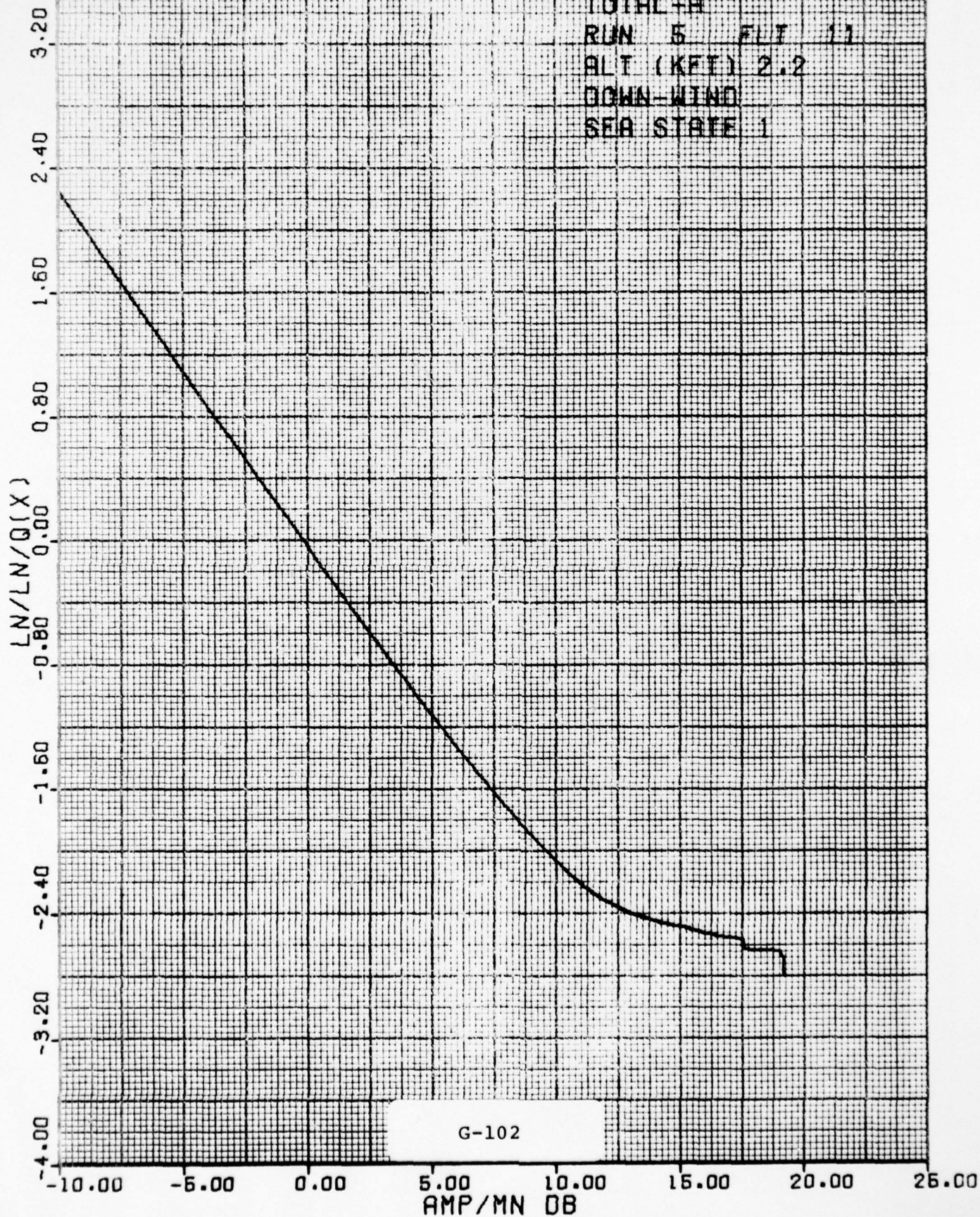
TOTAL-A

RUN 5 FLT 11

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 1



G-102

WEIBULL

TOTAL -8

RUN 7 FLT 11

ALT (KFT) 3.3

UP-WIND

SEA STATE 1

$\ln/\ln/Q(X)$

3.20

2.40

1.60

0.80

0.00

-0.80

-1.60

-2.40

-3.20

-4.00

G-103

-12.00

-8.00

-4.00

0.00

4.00

8.00

12.00

16.00

AMP/MY DB

WEIBULL

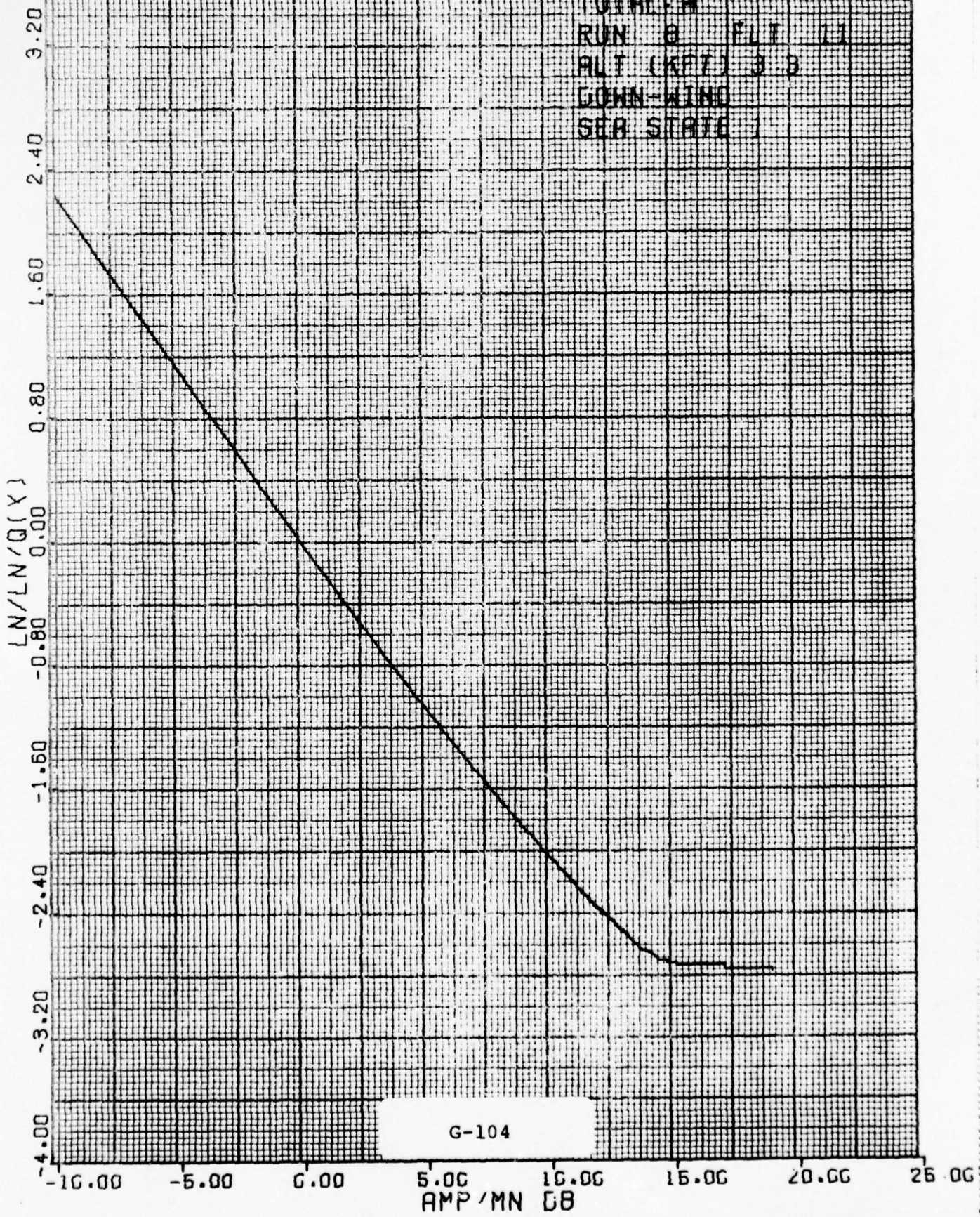
TOTAL R

RUN 8 FLT 11

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 1



G-104

WEIBULL

TOTAL-R

RUN 9 FLT 11

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 1

$\ln/\ln/Q(X)$

1.70

1.20

0.70

0.20

-0.30

-0.80

-1.30

-1.80

-2.30

-2.80

G-105

-12.00

-8.00

-4.00

0.00

4.00

8.00

12.00

16.00

AMP/MN DB

WEIBULL

TOTAL-A

RUN 1 FLT 16

ALT (KFT) 1.1

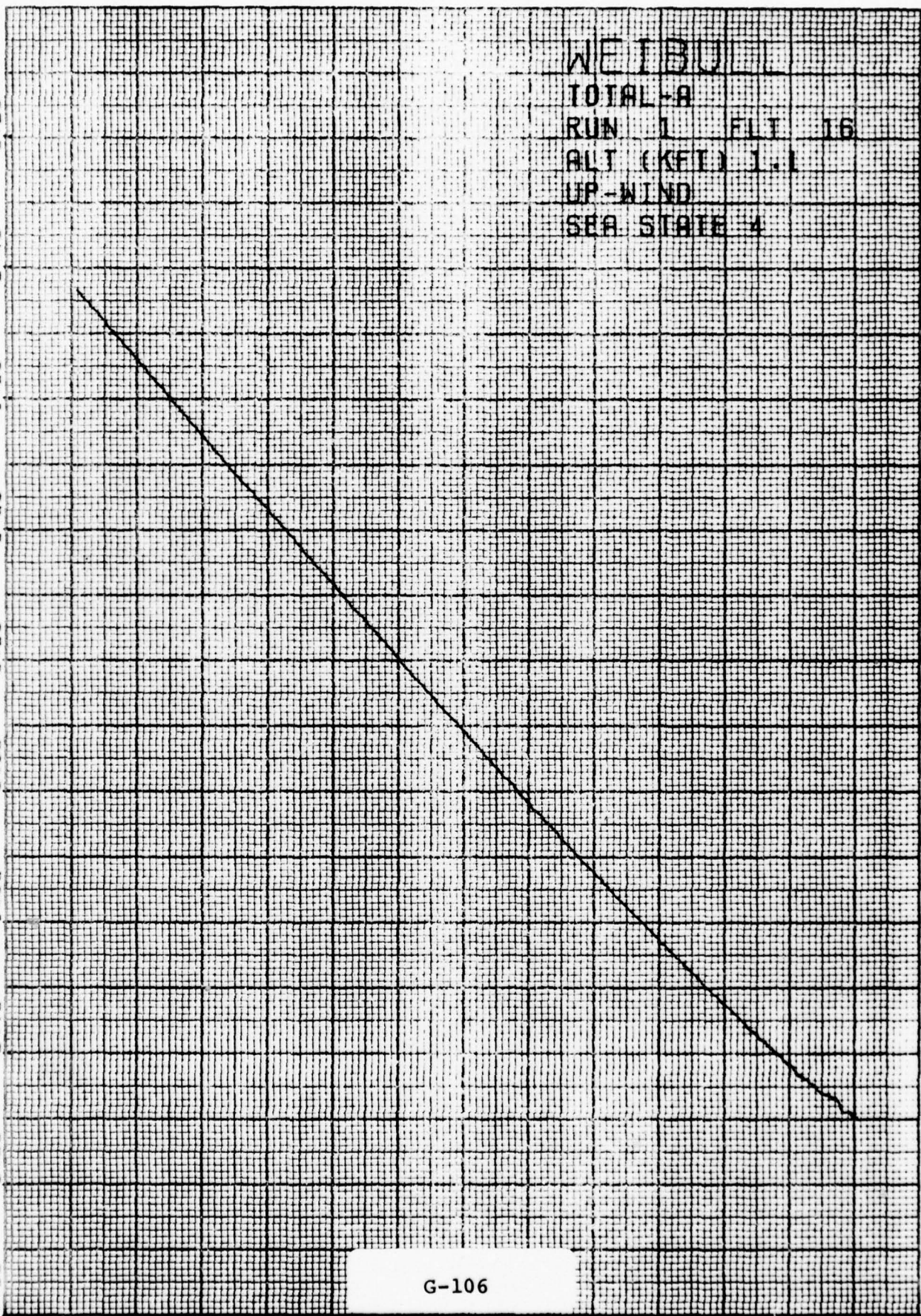
UP-WIND

SEA STATE 4

LN/LN/Q(X)
3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-106

AMP/MN DB
-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00



WEIBULL

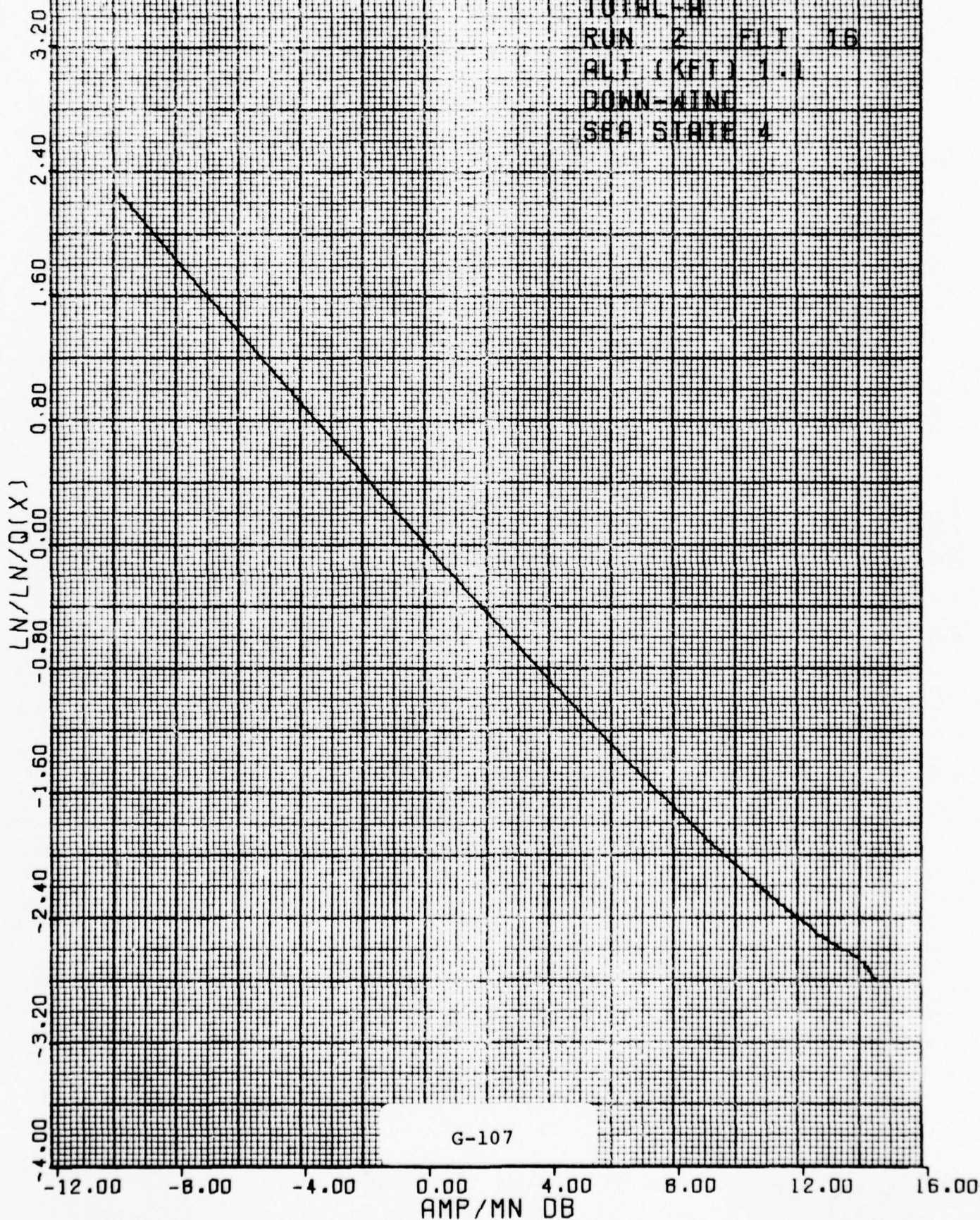
TOTAL-R

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



WEIBULL

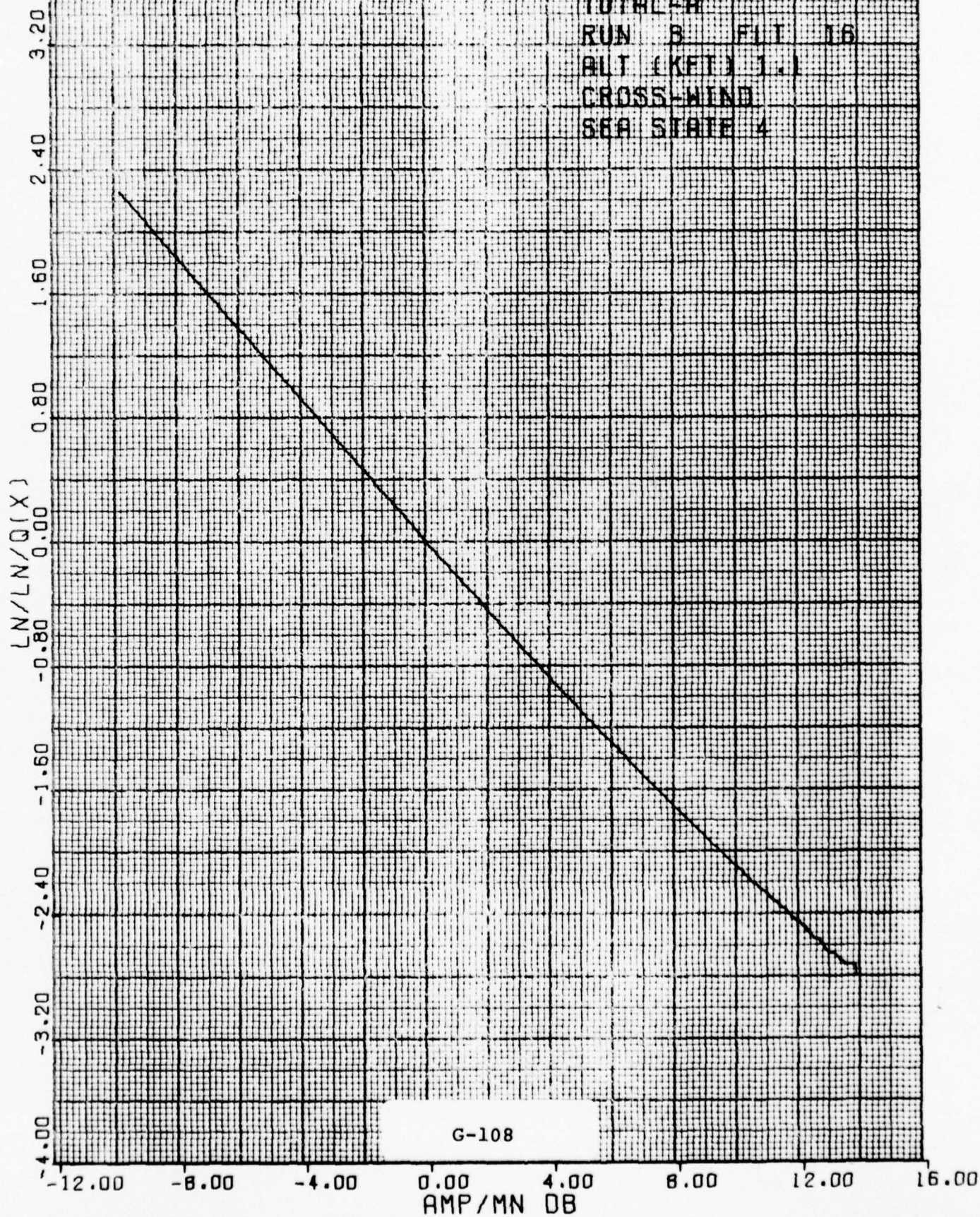
TOTAL-R

RUN B FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4



WEIBULL

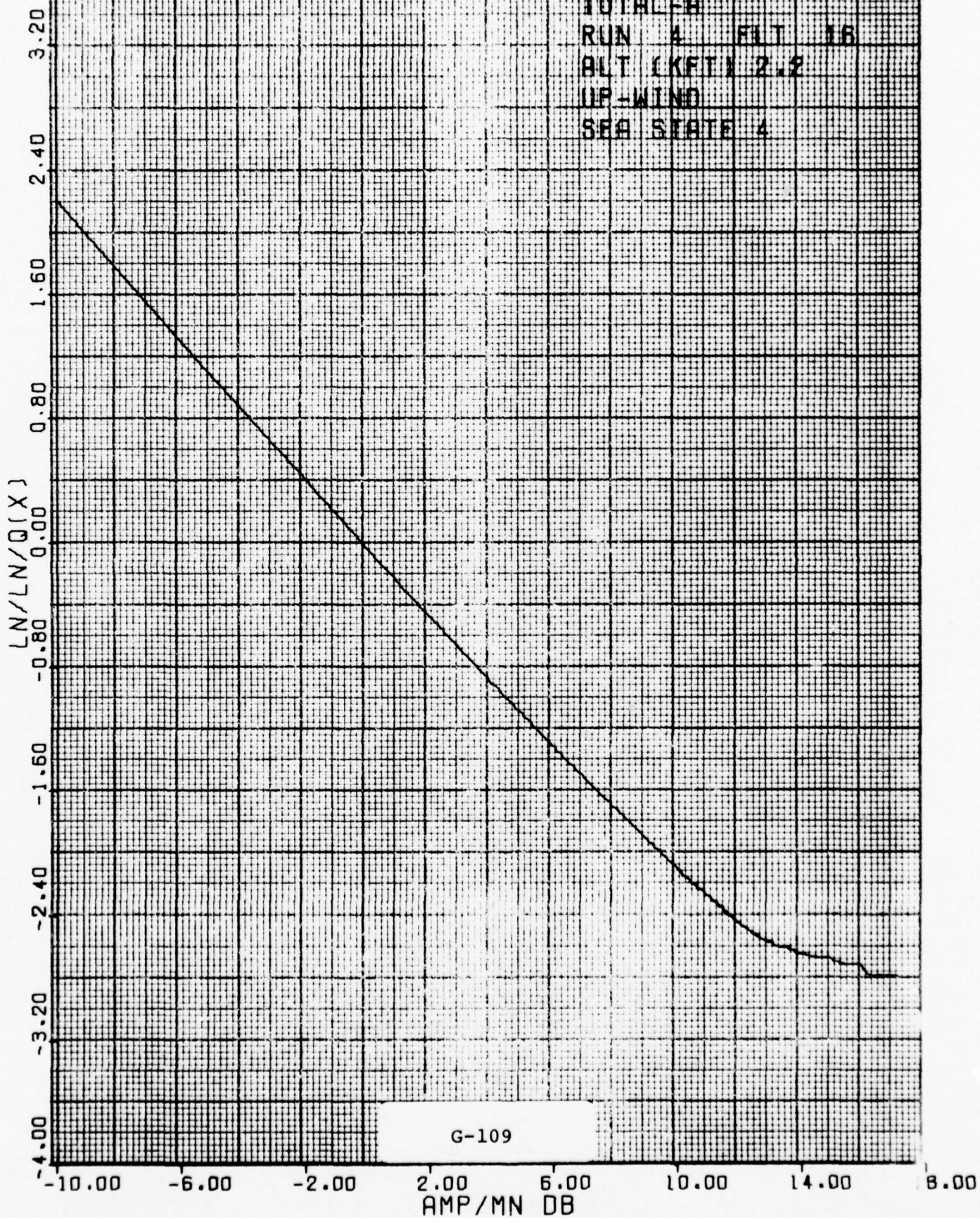
TOTAL-A

RUN 4 FLT 16

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-109

WEIBULL

TOTAL-R

RUN 5 FLT 15

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4

LN/LN/Q(X)

G-110

AMP/MN DB

-10.00 -5.00 0.00 5.00 10.00 15.00 20.00 25.00

WEIBULL

TOTAL-R

RUN 6 FLT 16

ALT (KFT) 2.2

CROSS-WIND

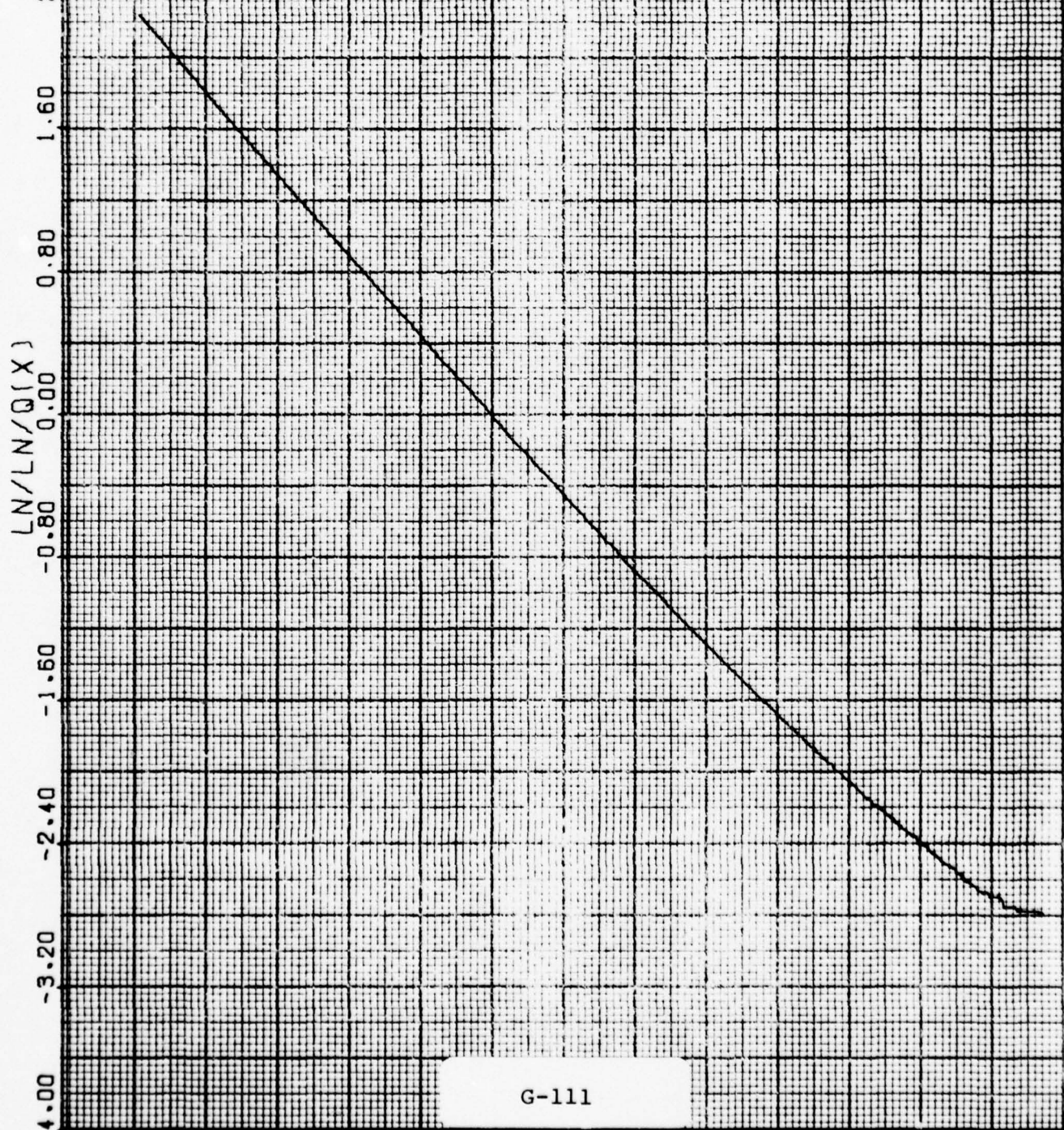
SEA STATE 4

$LN/LN/Q(X)$

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00
AMP/MN DB

G-111



WEIBULL

TOTAL-B

RUN 7 FLT 16

ALT (KFT) 3.3

UP-WIND

SEA STATE 4

LN/LN/Q(X)

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-112

AMP/MN DB

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00

WEIBULL

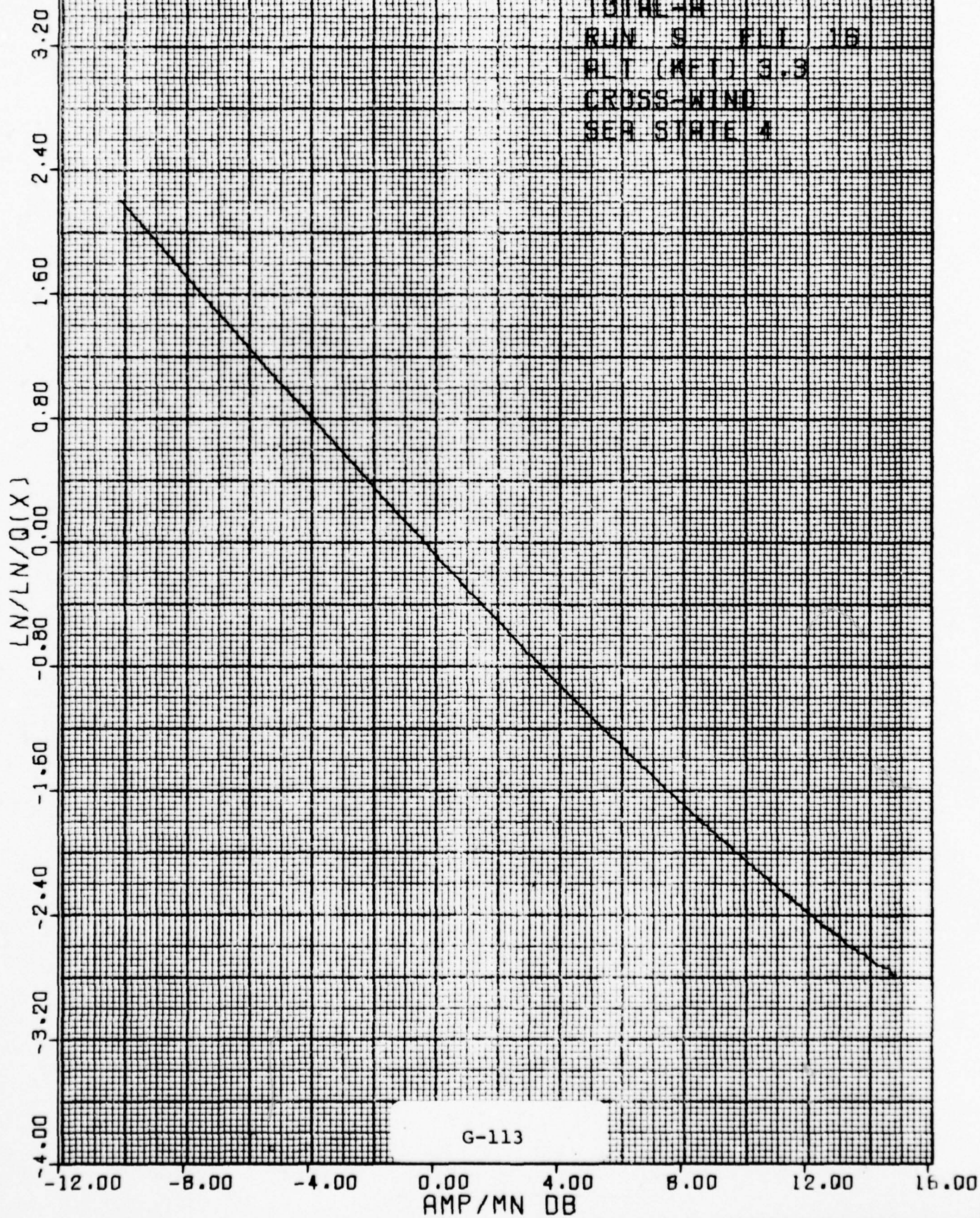
TOTAL-R

RUN 9 FLT 16

ALT (MFT) 3.3

CROSS-WIND

SEA STATE 4



WEIBULL

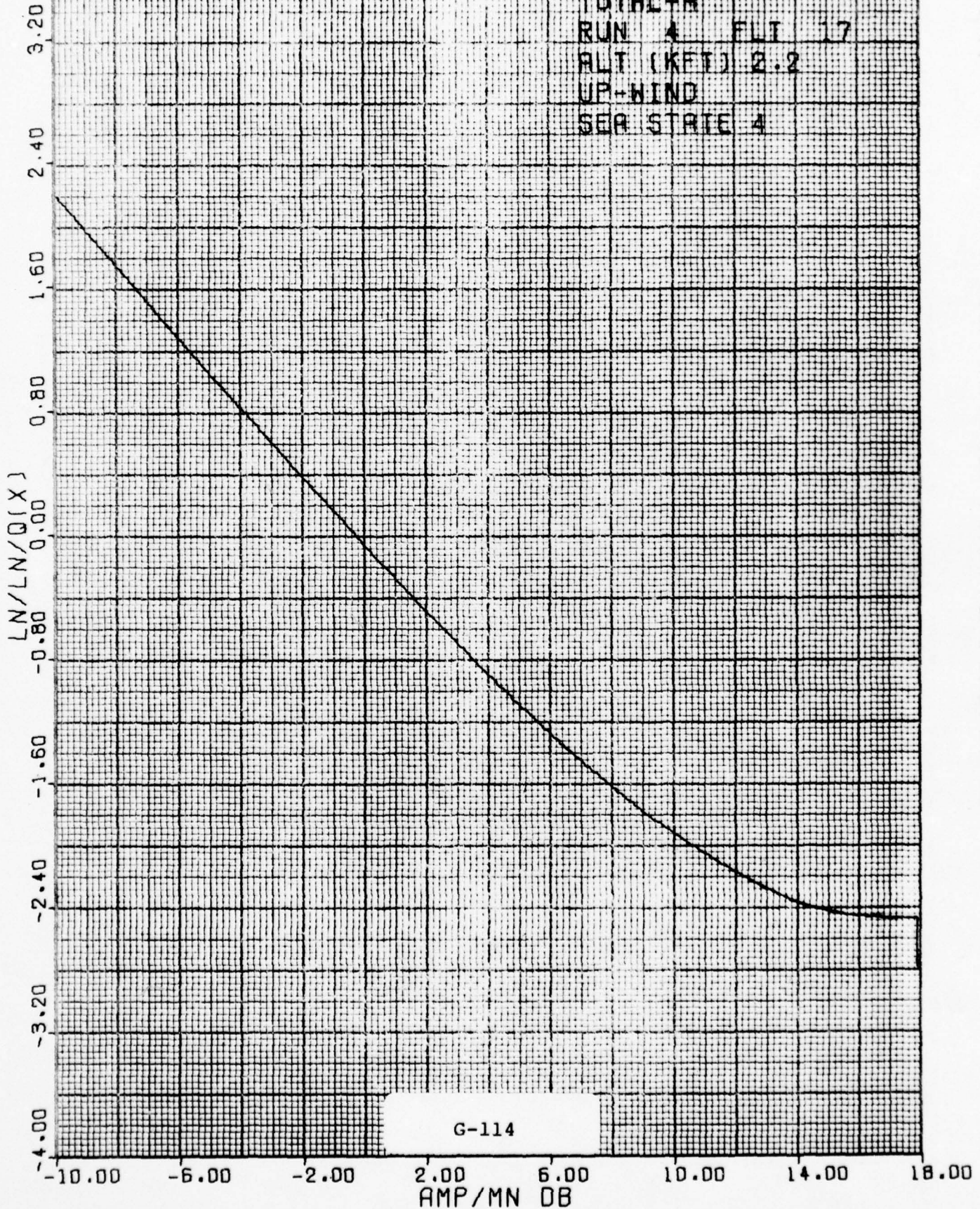
TOTAL-R

RUN 4 FLI 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-114

WEIBULL

TOTAL-R

RUN 6 FLT 17

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4

LN/LN/Q(X)

1.70

1.20

0.70

0.20

-0.30

-0.80

-1.30

-1.80

-2.30

-2.80

G-115

-10.00

-5.00

0.00

5.00

10.00

15.00

20.00

25.00

AMP/MN DB

WEIBULL

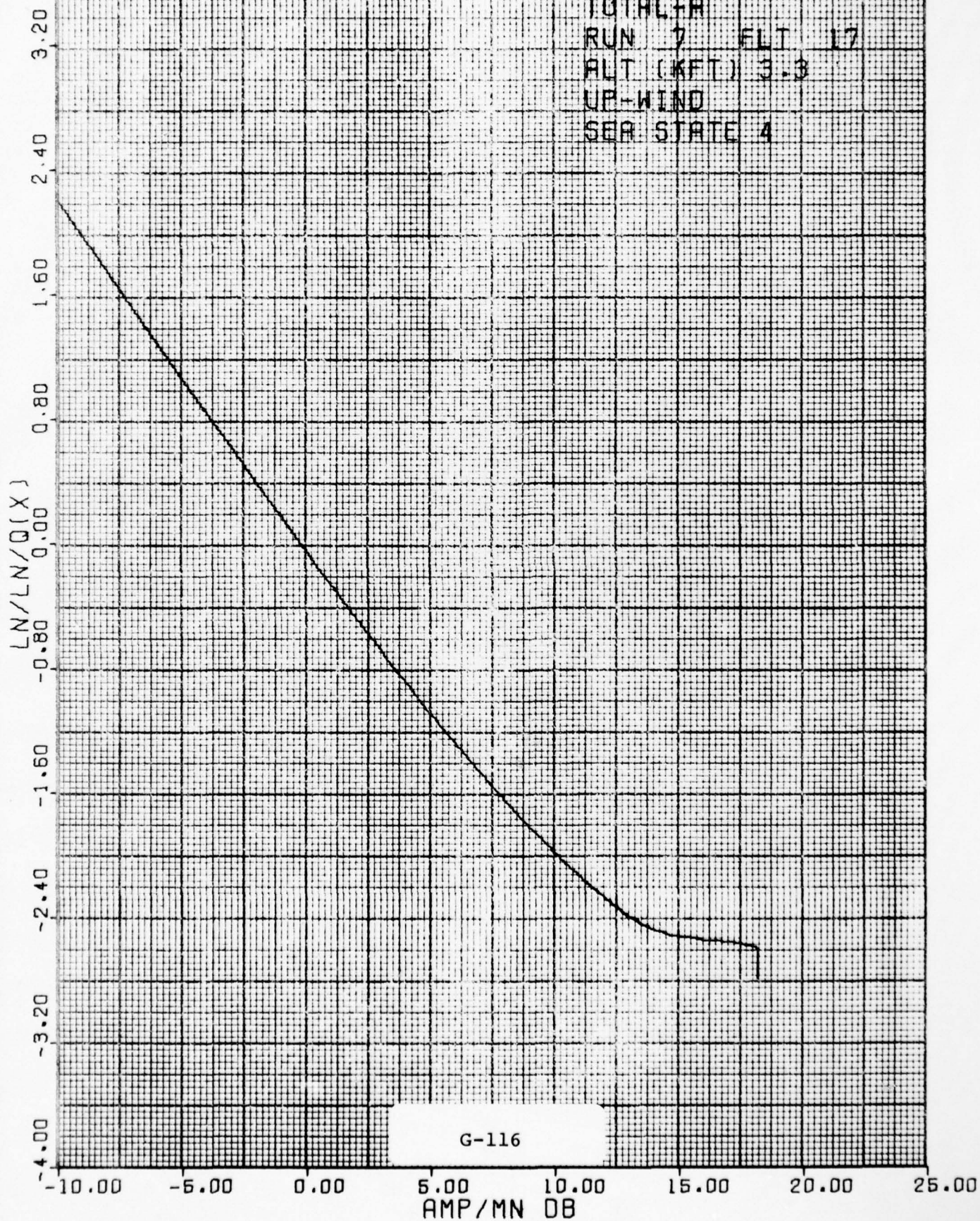
TOTAL-R

RUN 7 FLT 17

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



WEIBULL

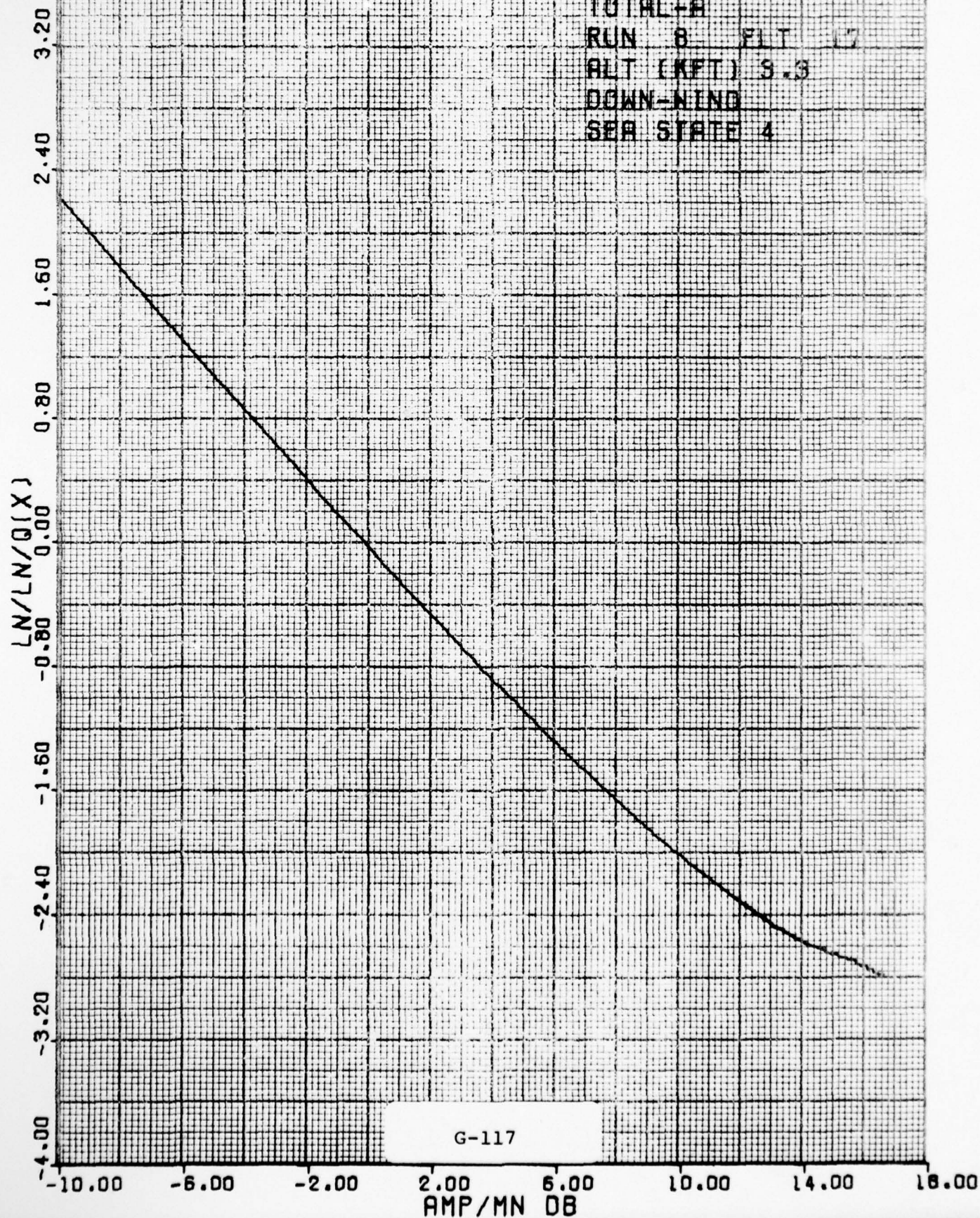
TOTAL-A

RUN 8 FLT 17

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4



UNCLASSIFIED

1.1.4 Histograms TOTAL N LOG Q

All valid clutter data for representative runs is included. The (N) indicates that each of the histograms H_{ij} was normalized by its mean before combining to form the total histogram for the run. The vertical axis is the logarithm base 10 of 1 minus the cumulative probability, i.e., $\text{LOG}_{10}(1-P_{(x)})$. Various points on the tail of the distribution are clearly read from this type of plot. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

UNCLASSIFIED

Material for this Subsection
appears in Volume III, Appendix B

G-119 through G-156
UNCLASSIFIED

UNCLASSIFIED

1.1.5 Histograms TOTAL N WEIBULL

All valid clutter data for representative runs is included. The suffix (N) after TOTAL indicates each histogram was normalized by its mean before combining into the total histogram for the sum. The vertical axis of Weibull plots is, $\ln (\ln (\frac{1}{1-P_{(x)}}))$ where $P_{(x)}$ is the cumulative probability density function. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

UNCLASSIFIED

Material for this Subsection
appears in Volume III, Appendix B

G-158 through G-195
UNCLASSIFIED

UNCLASSIFIED

1.1.6 Histograms TOTAL WEIBULL

All valid clutter data for representative runs is included. The lack of a suffix after TOTAL indicates no normalization procedures were used on the data. The vertical axis of Weibull plots is, $\ln \left(\ln \left(\frac{1}{1-P_{(x)}} \right) \right)$ where $P_{(x)}$ is the cumulative probability density function. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

WEIBULL

TOTAL

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3

$\ln/\ln/Q(X)$

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-197

AMP/MN DB

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

WEIBULL

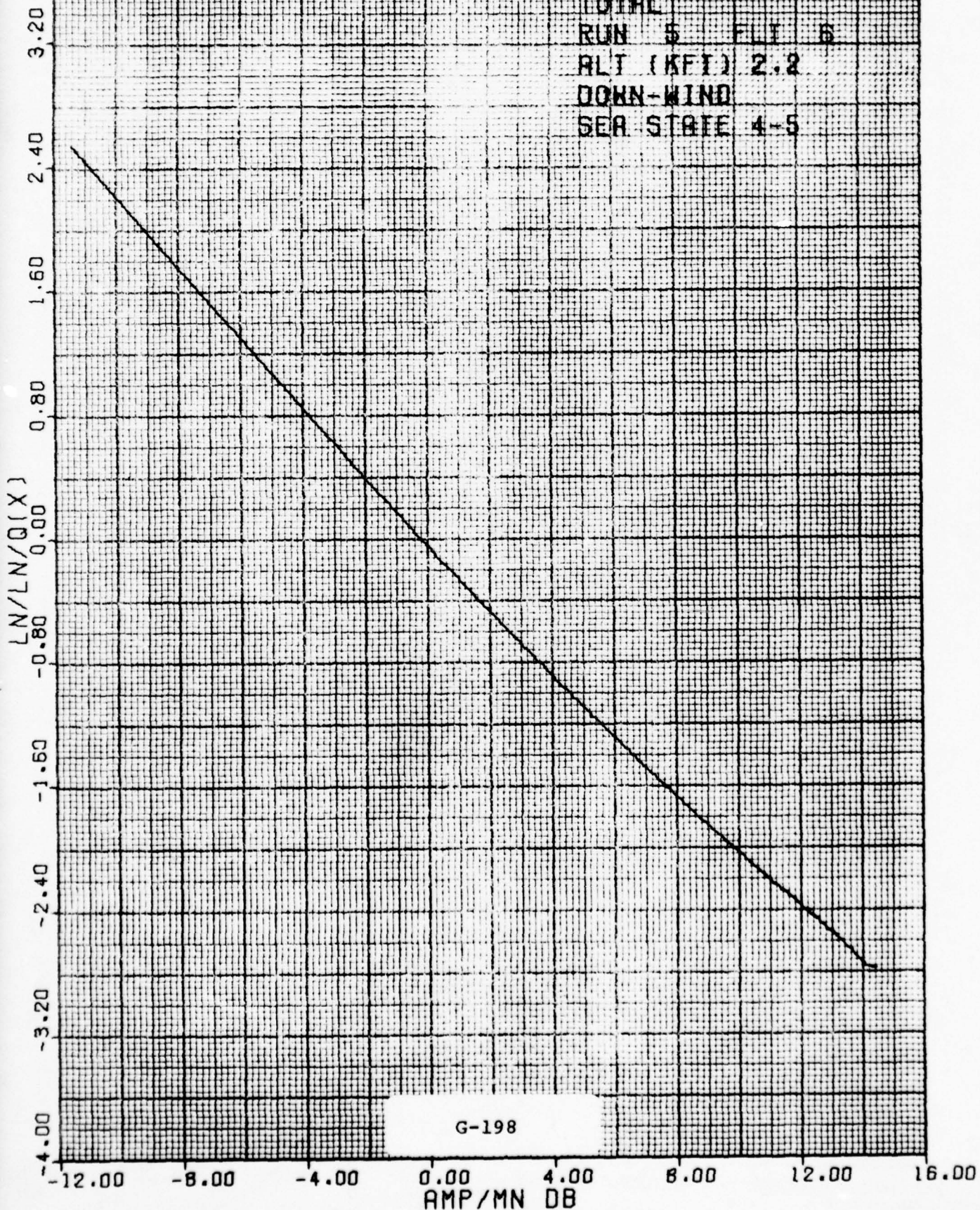
TOTAL

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



G-198

WEIBULL

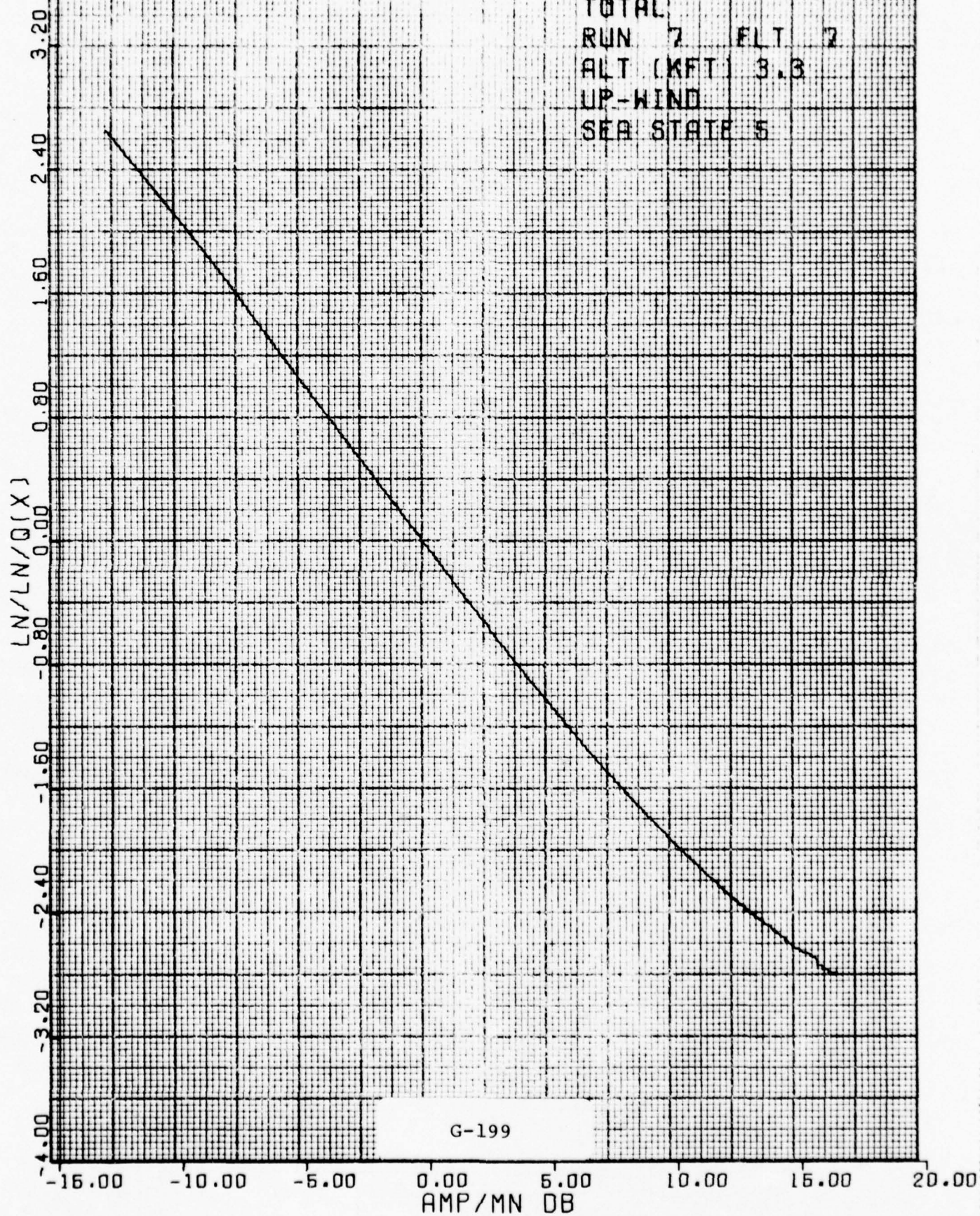
TOTAL

RUN 7 FLT 2

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



G-199

WEIBULL

TOTAL

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4

$LN/LN/Q(X)$

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-200

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00
AMP/MN DB

WEIBULL

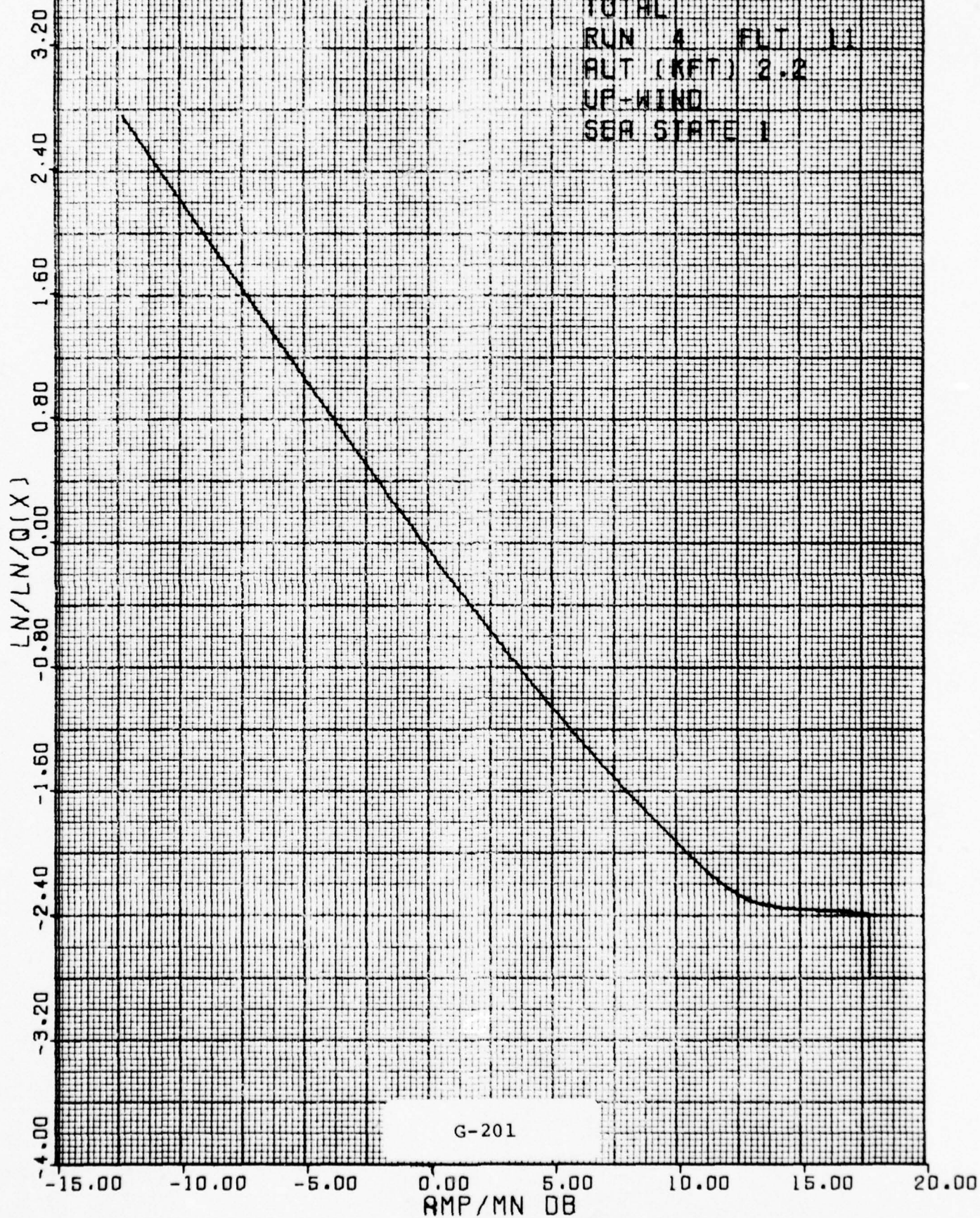
TOTAL

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1



G-201

WEIBULL

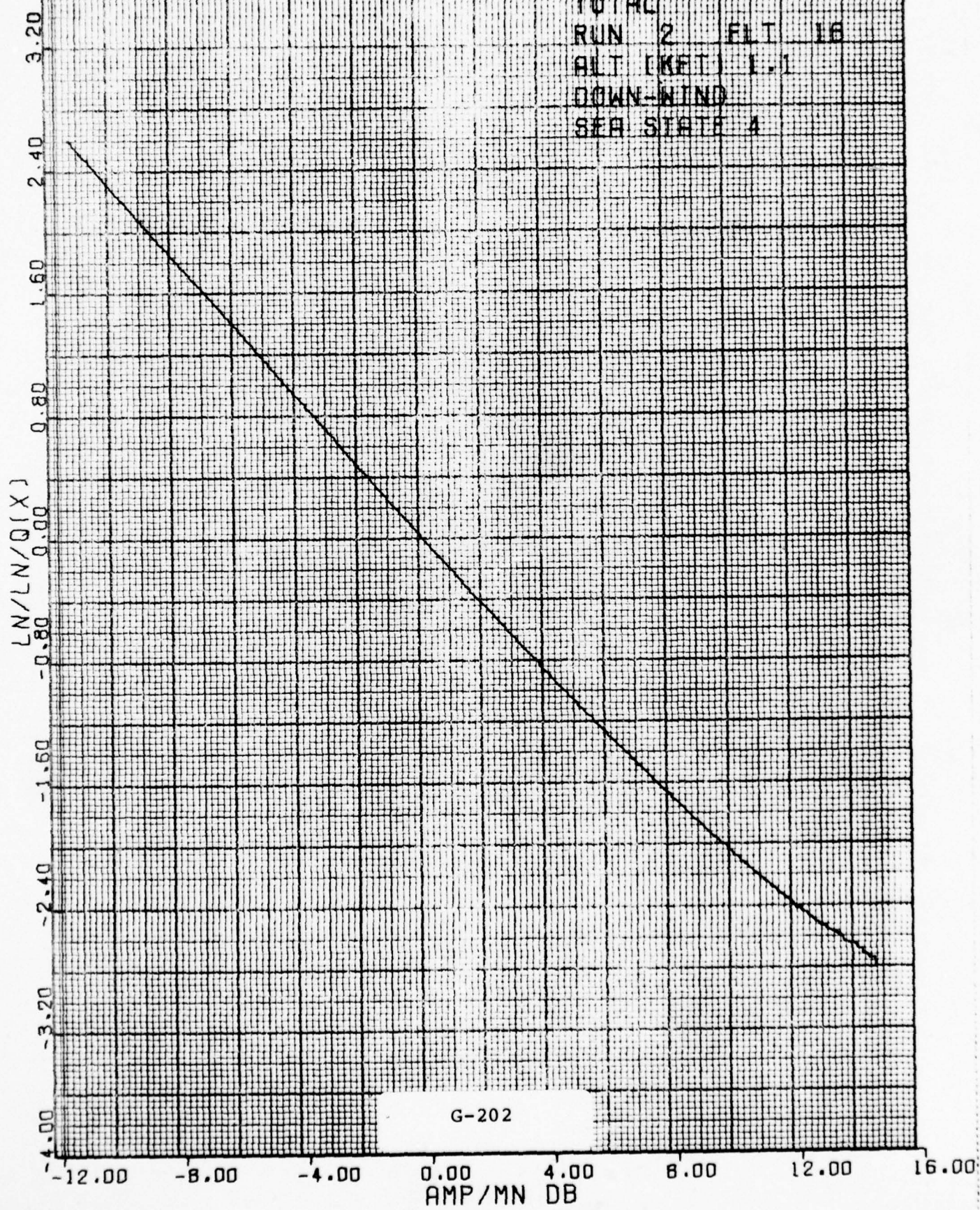
TOTAL

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



G-202

WEIBULL

TOTAL

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

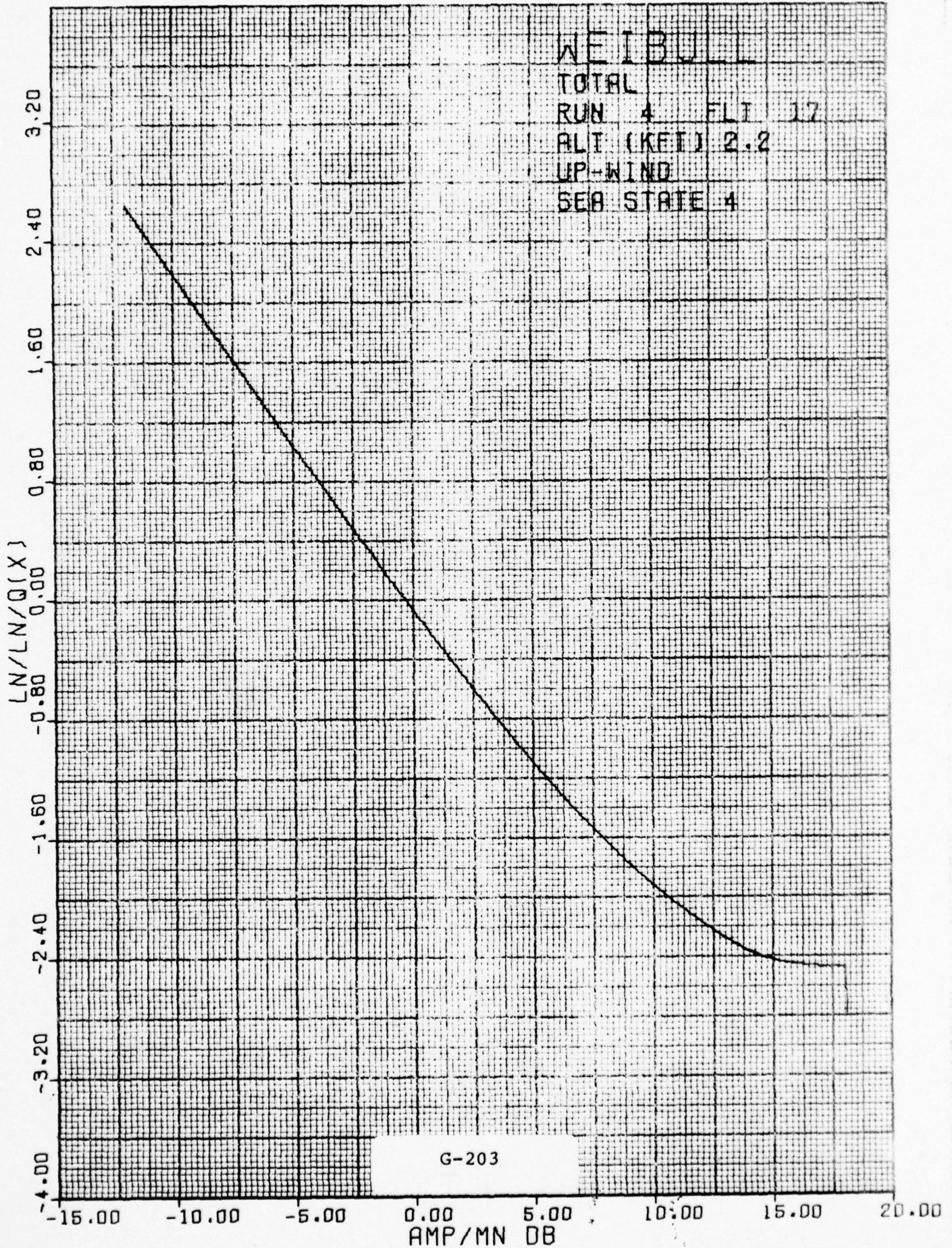
SEA STATE 4

$LN/LN/Q(X)$

3.20
2.40
1.60
0.80
0.00
-0.80
-1.60
-2.40
-3.20
-4.00

G-203

AMP/MN DB
-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00



UNCLASSIFIED

1.1.7 Histograms TOTAL A PDF

All valid clutter data for representative runs is included. The suffix (A) after TOTAL indicates the histograms were first combined into range gate histograms then normalized by the range gate mean. These range gate mean histograms were then combined to form the total histogram. "A" normalization mostly removes hardware biases in the data. The vertical axis is the raw histogram or probability density. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

PDF

TOTAL-A

RUN 3 FLT 4

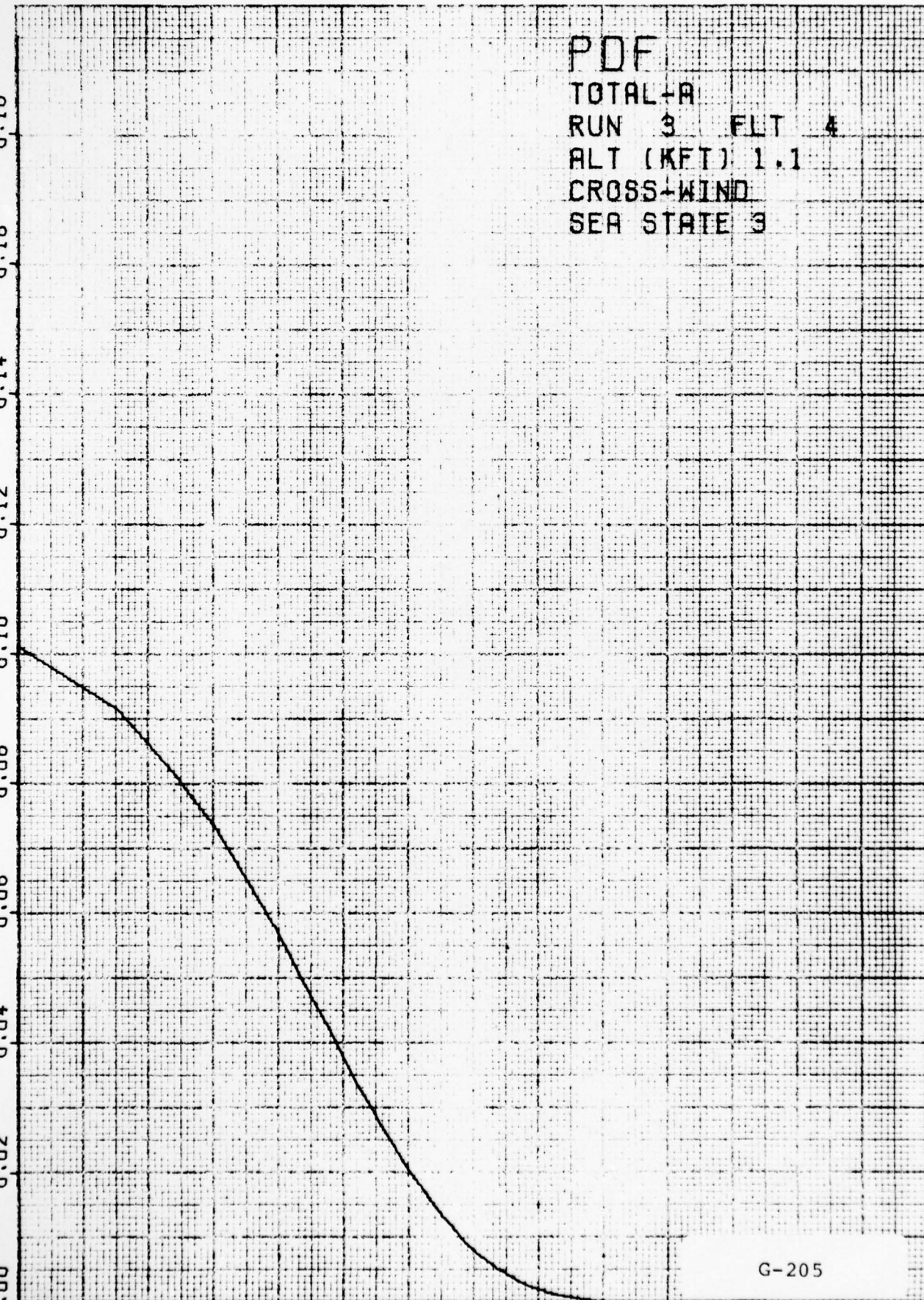
ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3

DENSITY

0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00



AMP/MN DB

G-205

PDF

TOTAL-R

RUN 5 FLT 6

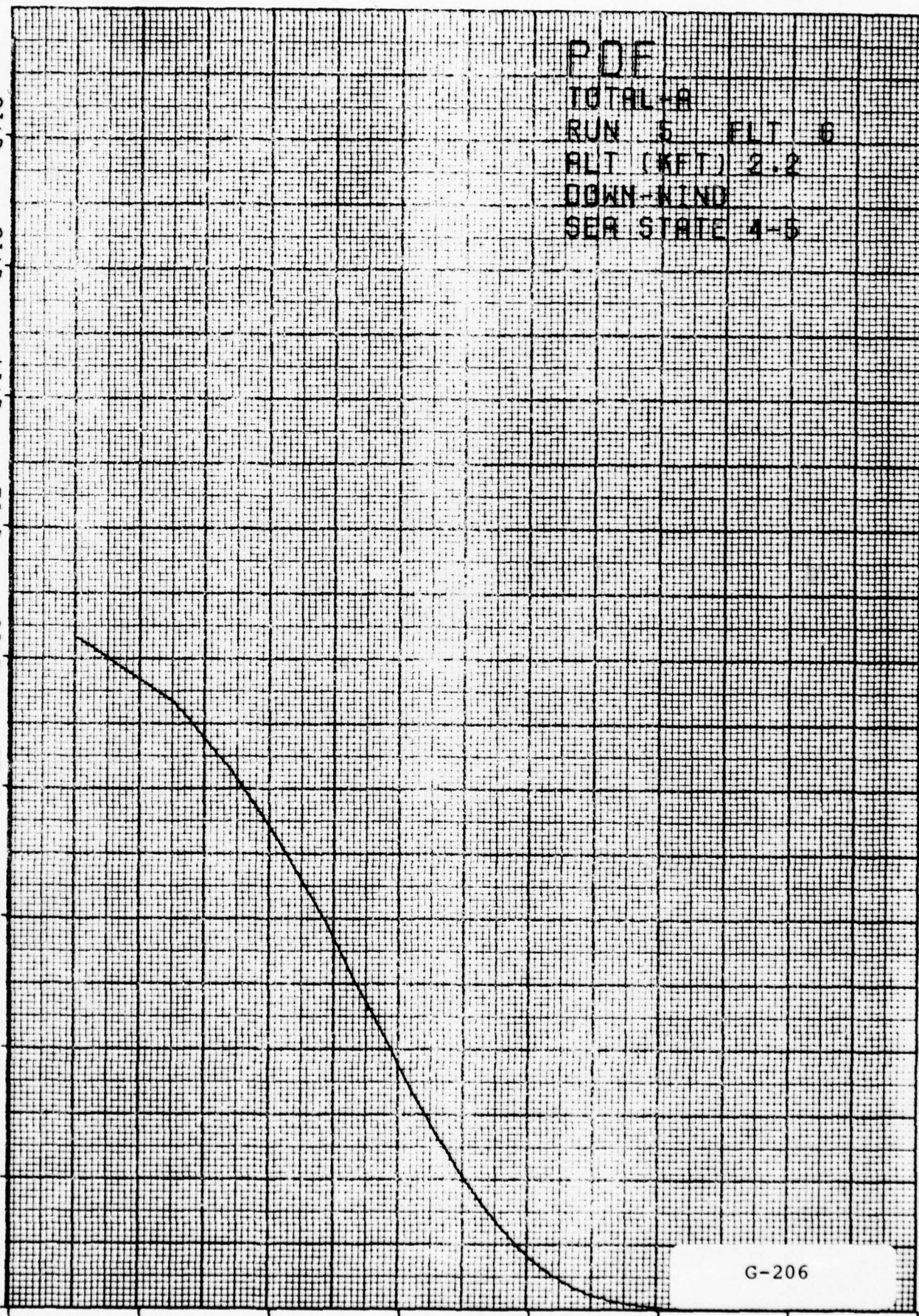
ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5

DENSITY

0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00



G-206

AMP/MN DB

PDF

TOTAL-A

RUN 2 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5

DENSITY

0.18

0.16

0.14

0.12

0.10

0.08

0.06

0.04

0.02

0.00

-10.00

-6.00

-2.00

2.00

6.00

10.00

14.00

18.00

AMP/MN DB

G-207

PDF

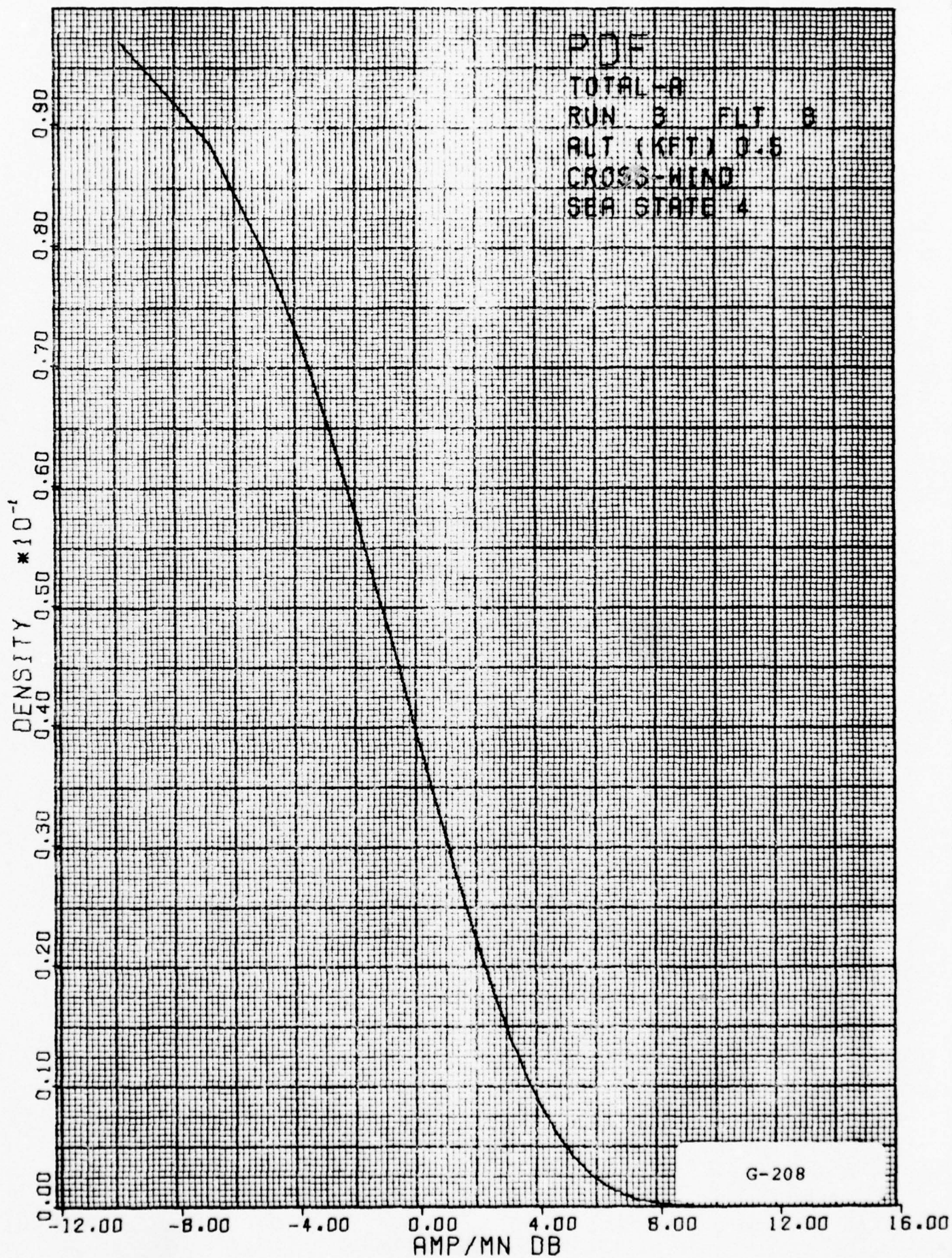
TOTAL-R

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



PDF

TOTAL-A

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1

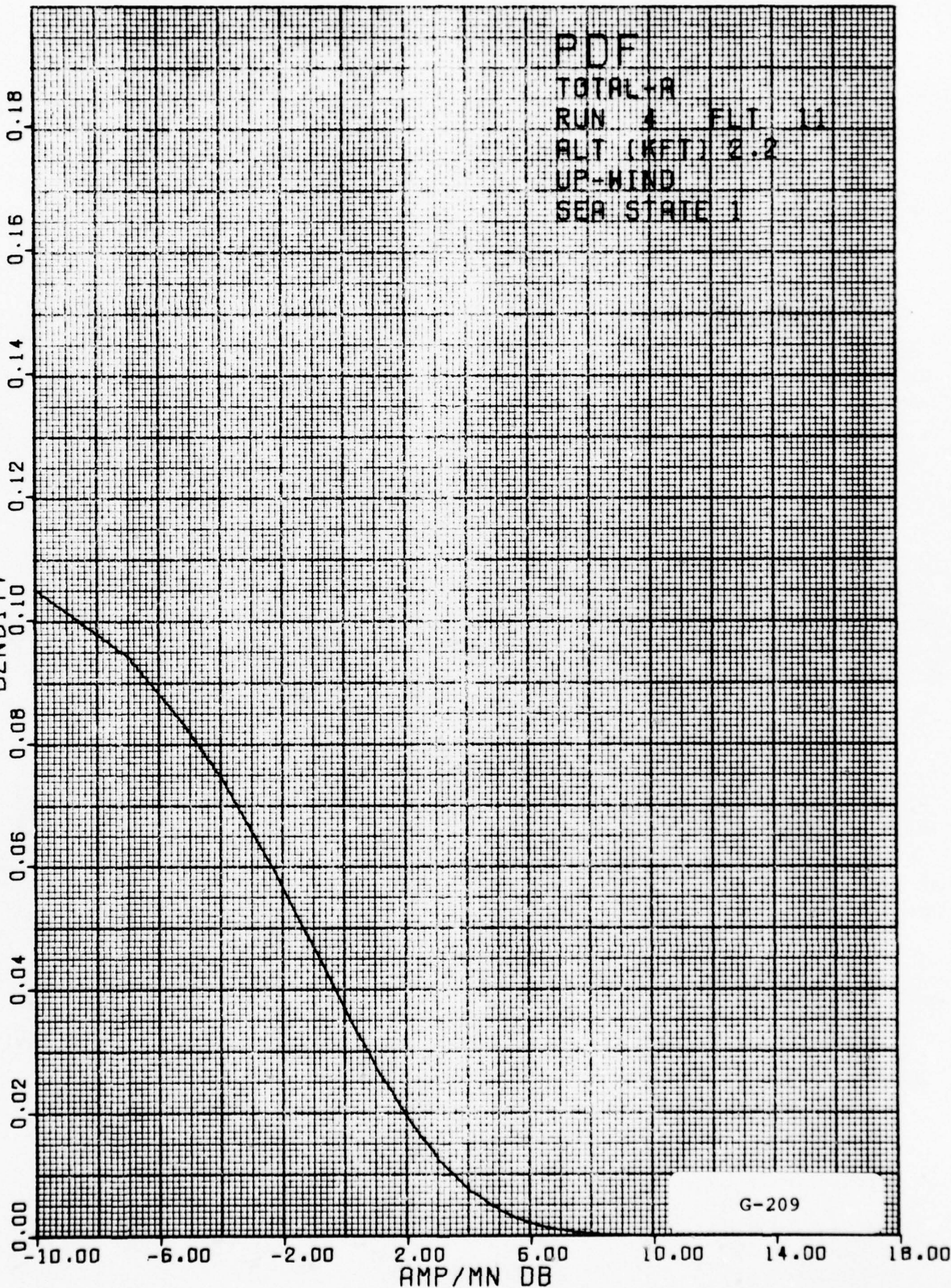
DENSITY

0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00

-10.00 -6.00 -2.00 2.00 6.00 10.00 14.00 18.00

AMP/MN DB

G-209



PDE

TOTAL-R

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-NING

SEA STATE 4

DENSITY

0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00

AMP/MN DB

G-210

-12.00 -8.00 -4.00 0.00 4.00 8.00 12.00 16.00

PDF

TOTAL-A

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4

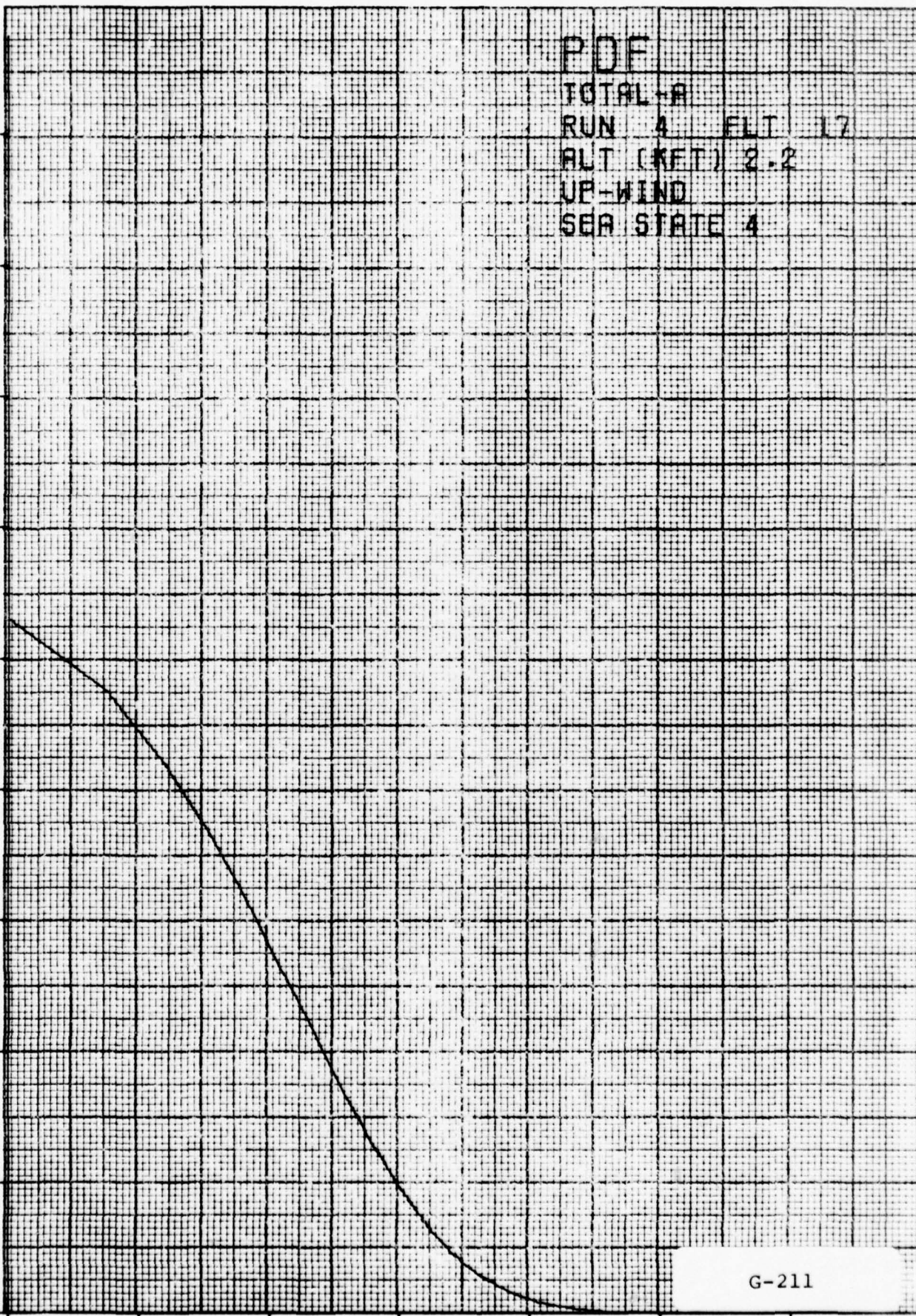
DENSITY

0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00

-10.00 -6.00 -2.00 2.00 6.00 10.00 14.00 18.00

AMP/MN DB

G-211



UNCLASSIFIED

1.1.8 Histograms TOTAL PDF

All valid clutter data for representative runs is included. The lack of a suffix after TOTAL indicates no normalization procedures were used on the data. The vertical axis is the raw histogram data or probability density. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

PDF

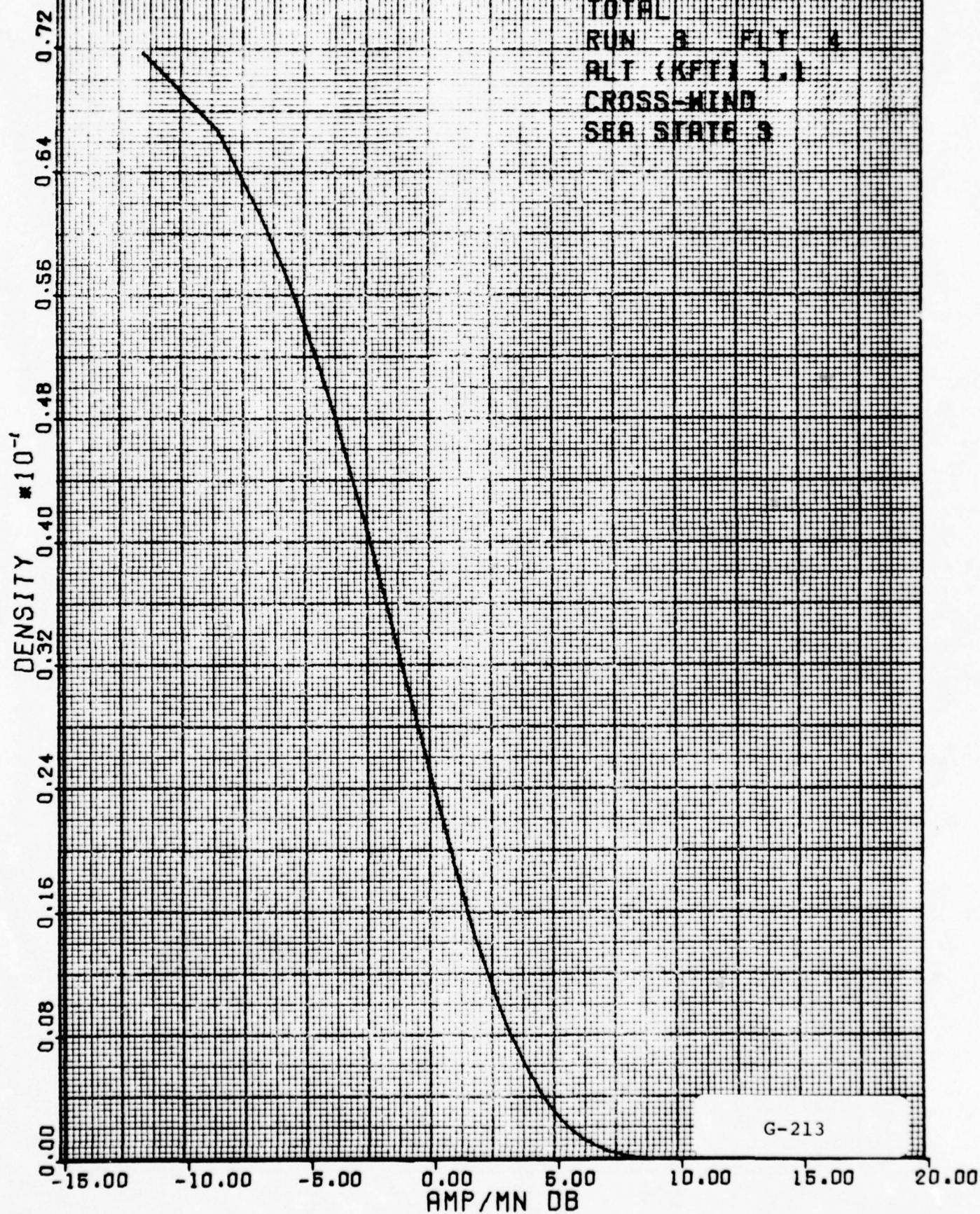
TOTAL

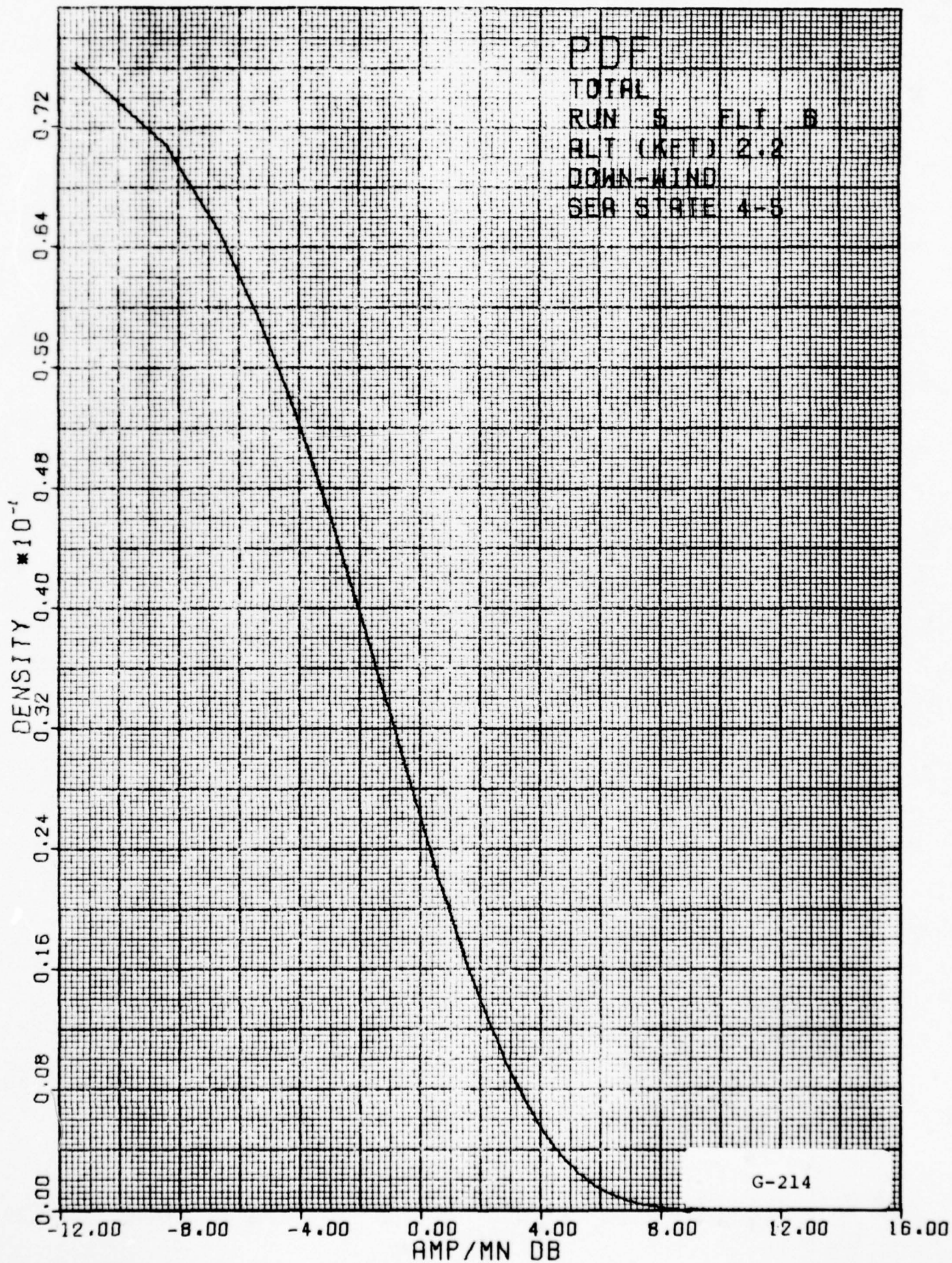
RUN 3 FLT 4

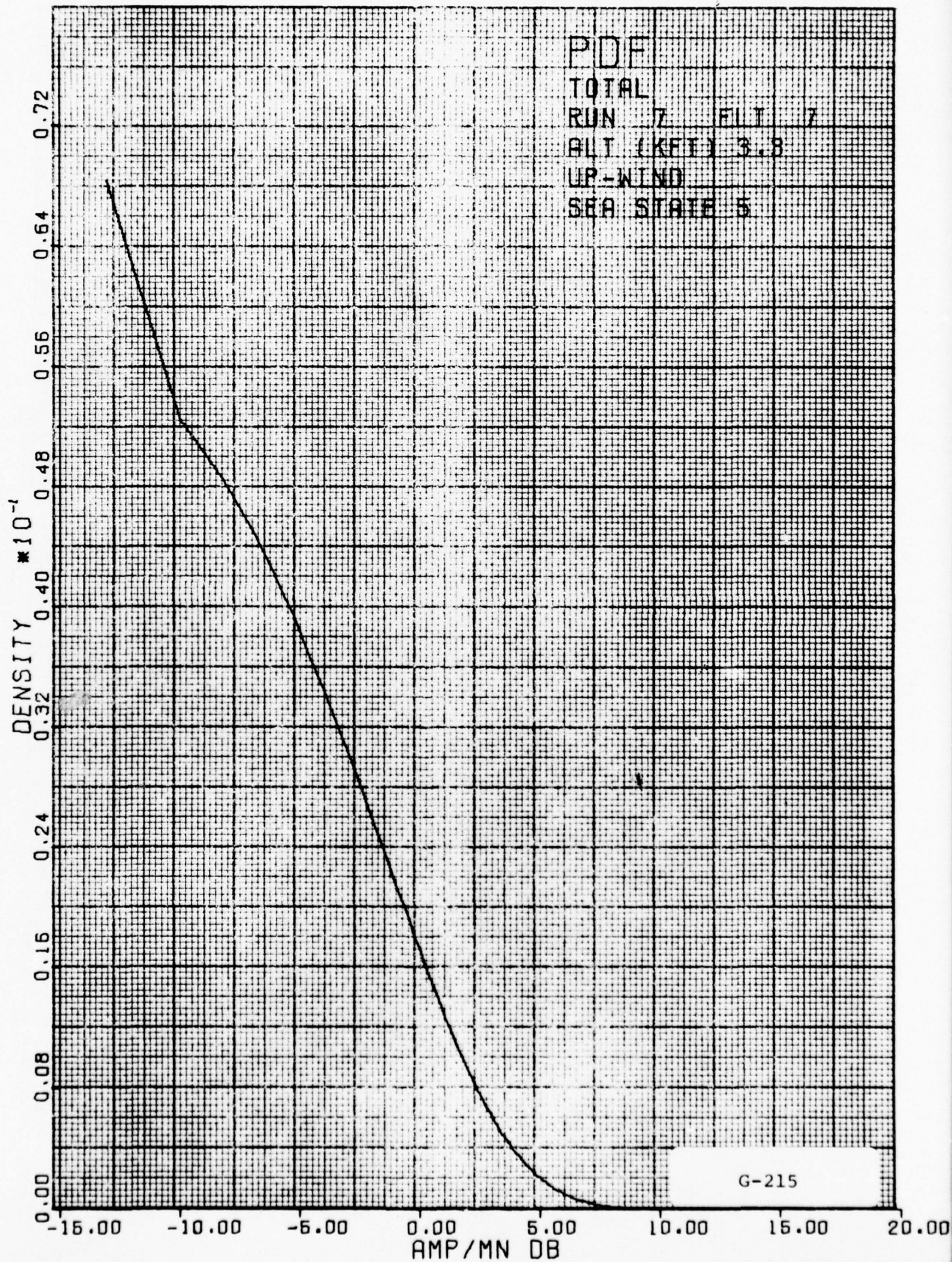
ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3







PDF

TOTAL

RUN 3 FLT 8

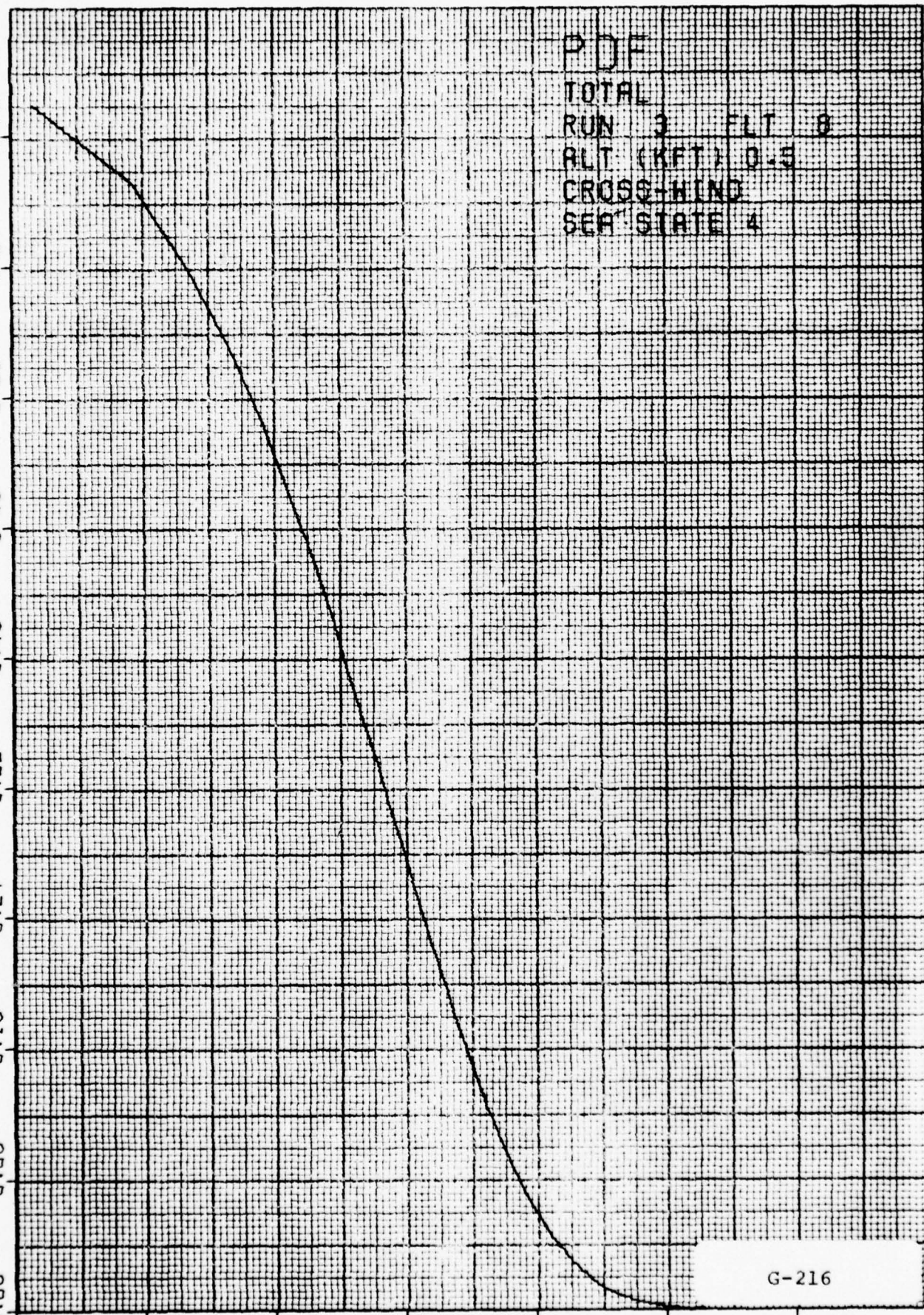
ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4

DENSITY $\times 10^{-2}$

0.72
0.64
0.56
0.48
0.40
0.32
0.24
0.16
0.08
0.00



G-216

AMP/MN DB

PDE

TOTAL

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

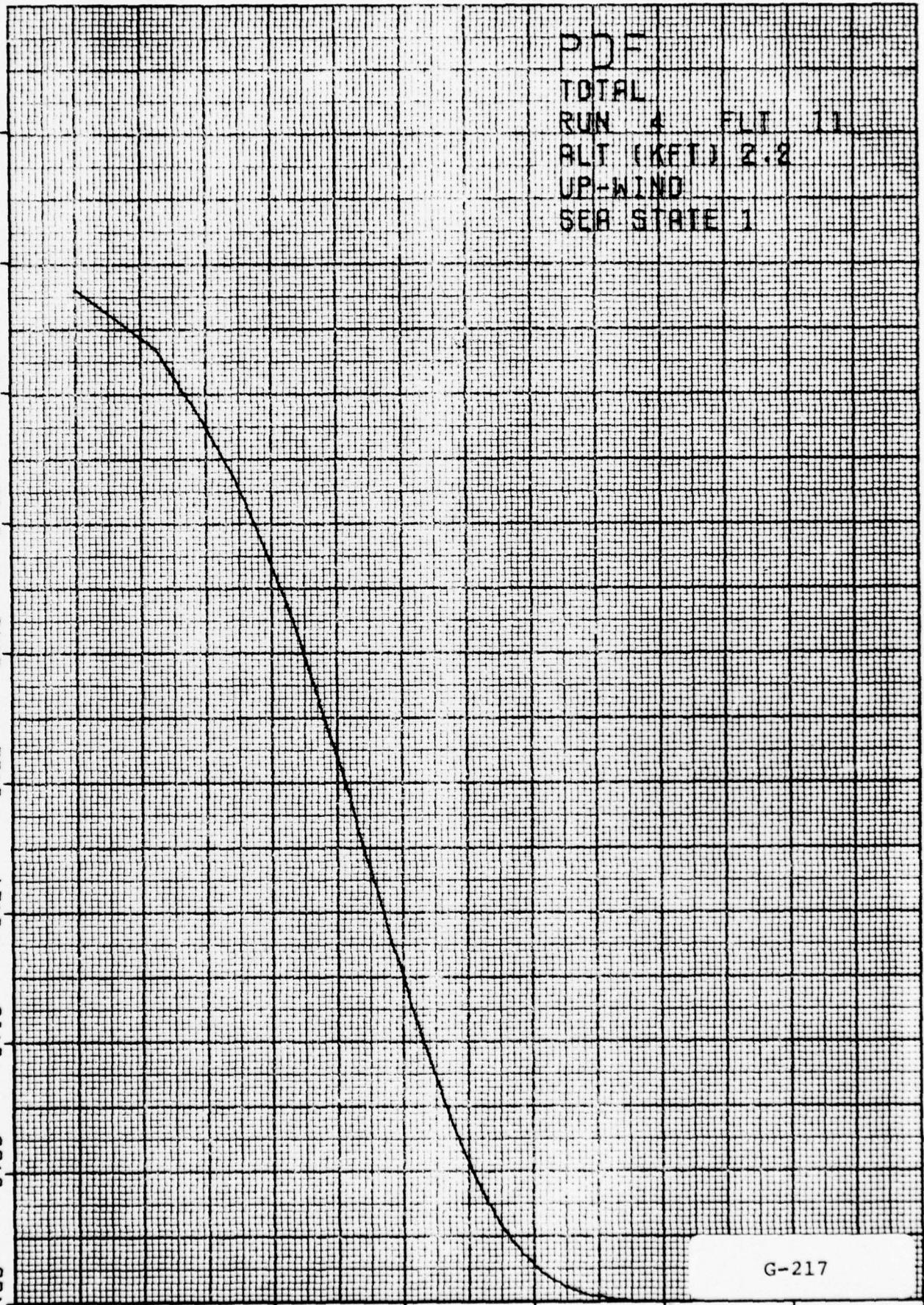
SEA STATE 1

DENSITY $\times 10^{-1}$

0.72
0.64
0.56
0.48
0.40
0.32
0.24
0.16
0.08
0.00

AMP/MN DB

G-217



PDF

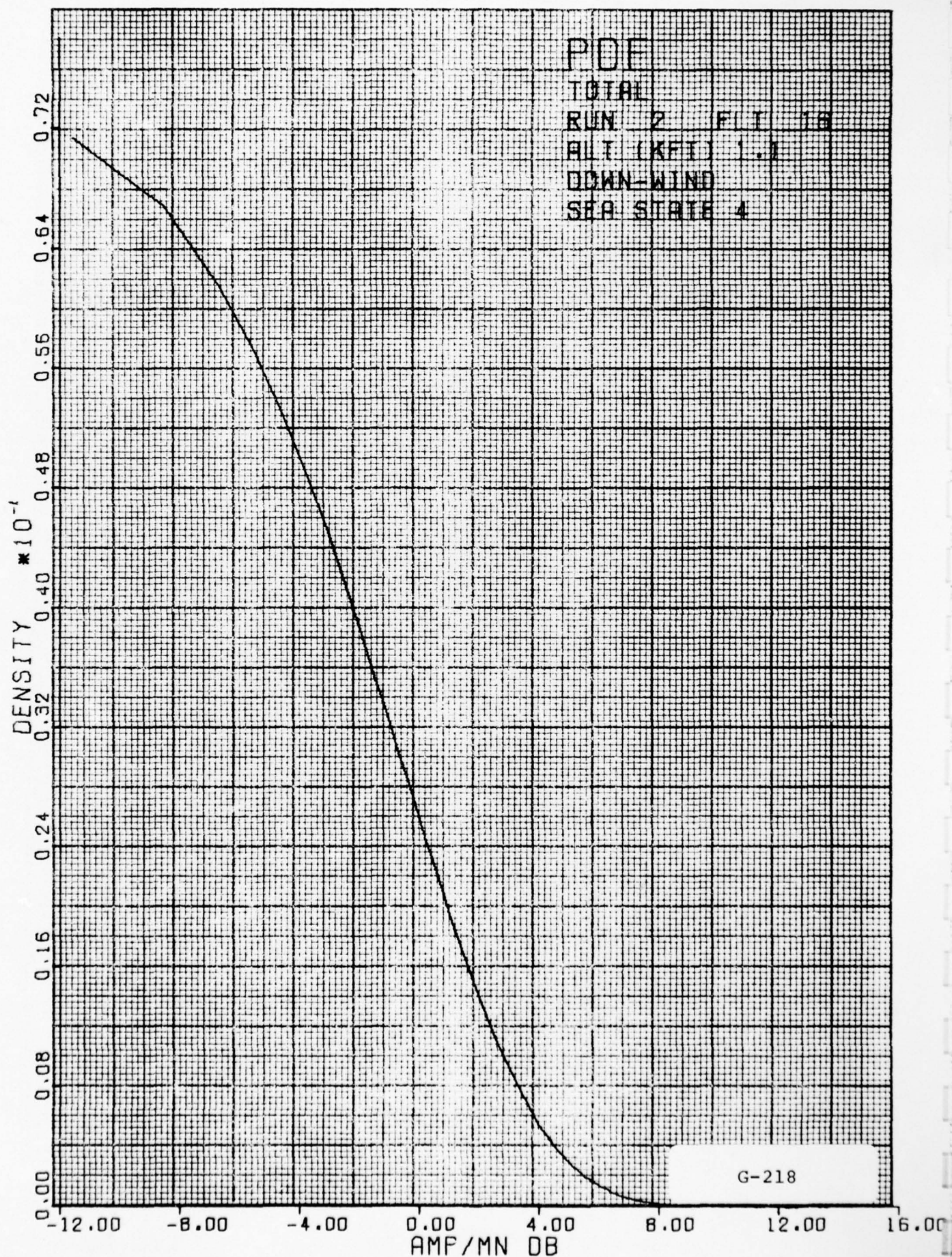
TOTAL

RUN 2 FLT 18

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



PDF

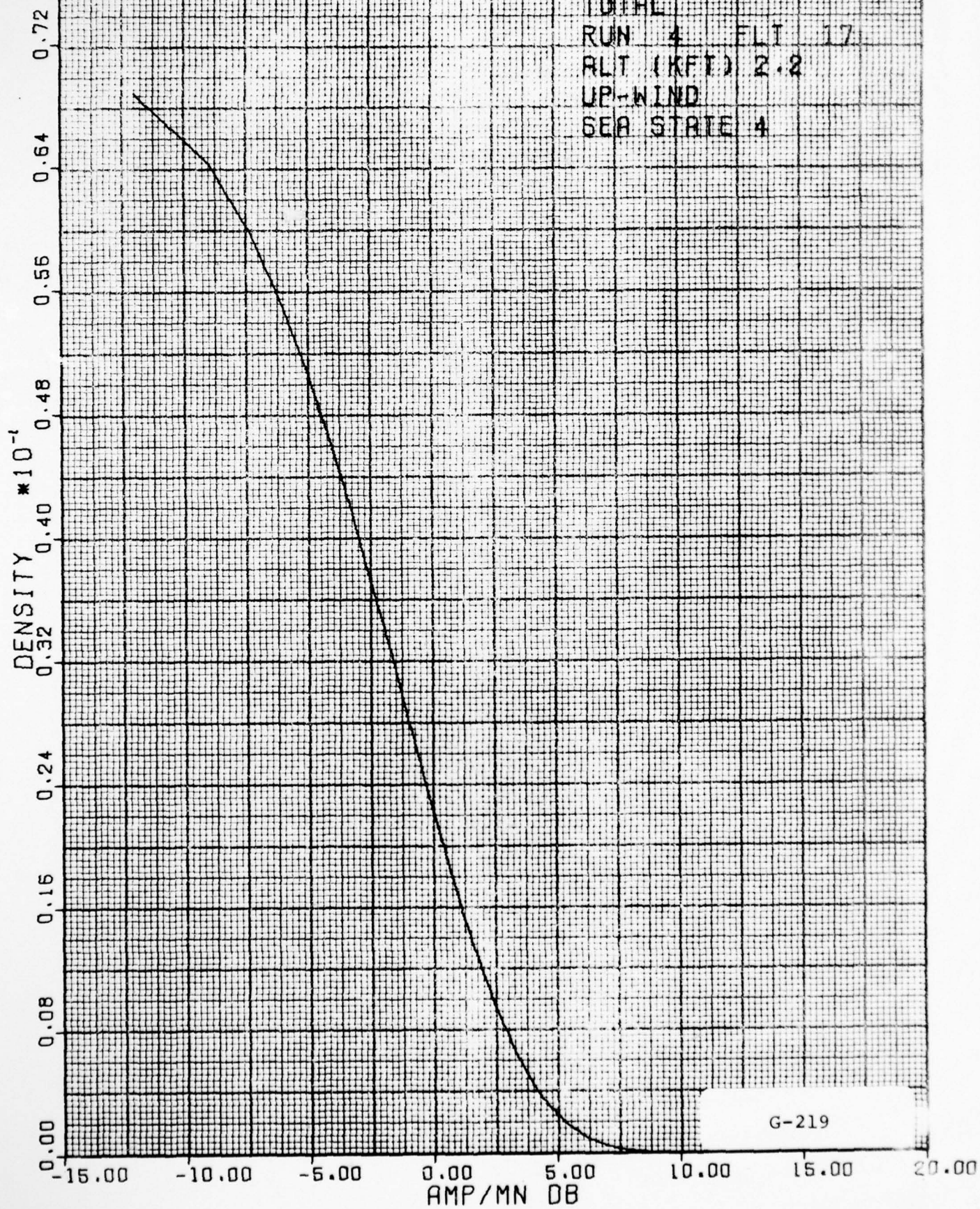
TOTAL

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-219

UNCLASSIFIED

1.1.9 Histograms TOTAL A PDF TAIL

All valid clutter data for representative runs is included. The suffix (A) after TOTAL indicates the histograms were first combined into range gate histograms then normalized by the range gate mean. These range gate mean histograms were then combined to form the total histogram. "A" normalization mostly removes hardware biases in the data. The vertical axis is probability density. Only the tail of the function is displayed to give better dynamic range. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

PDF TAIL

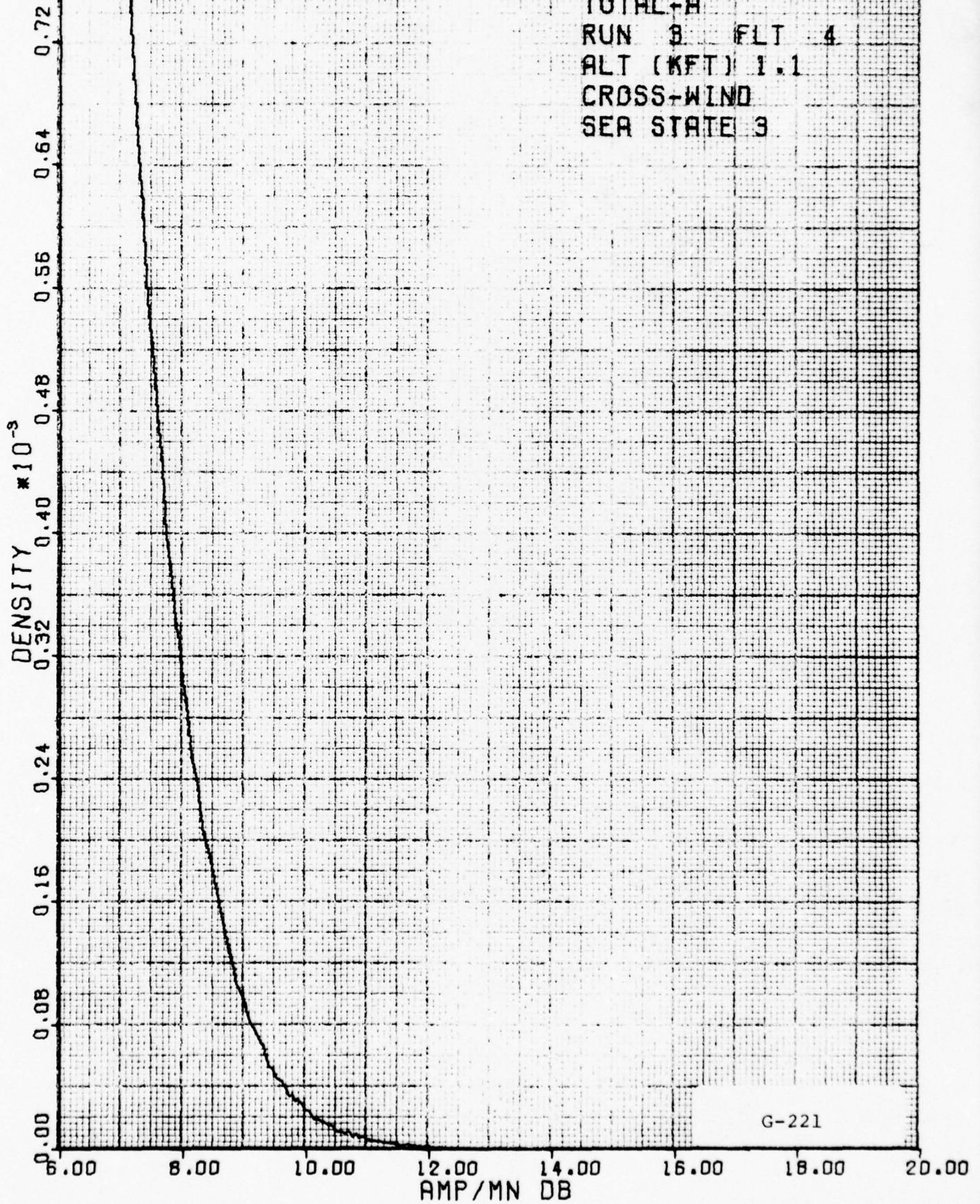
TOTAL-A

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



G-221

PDF TAIL

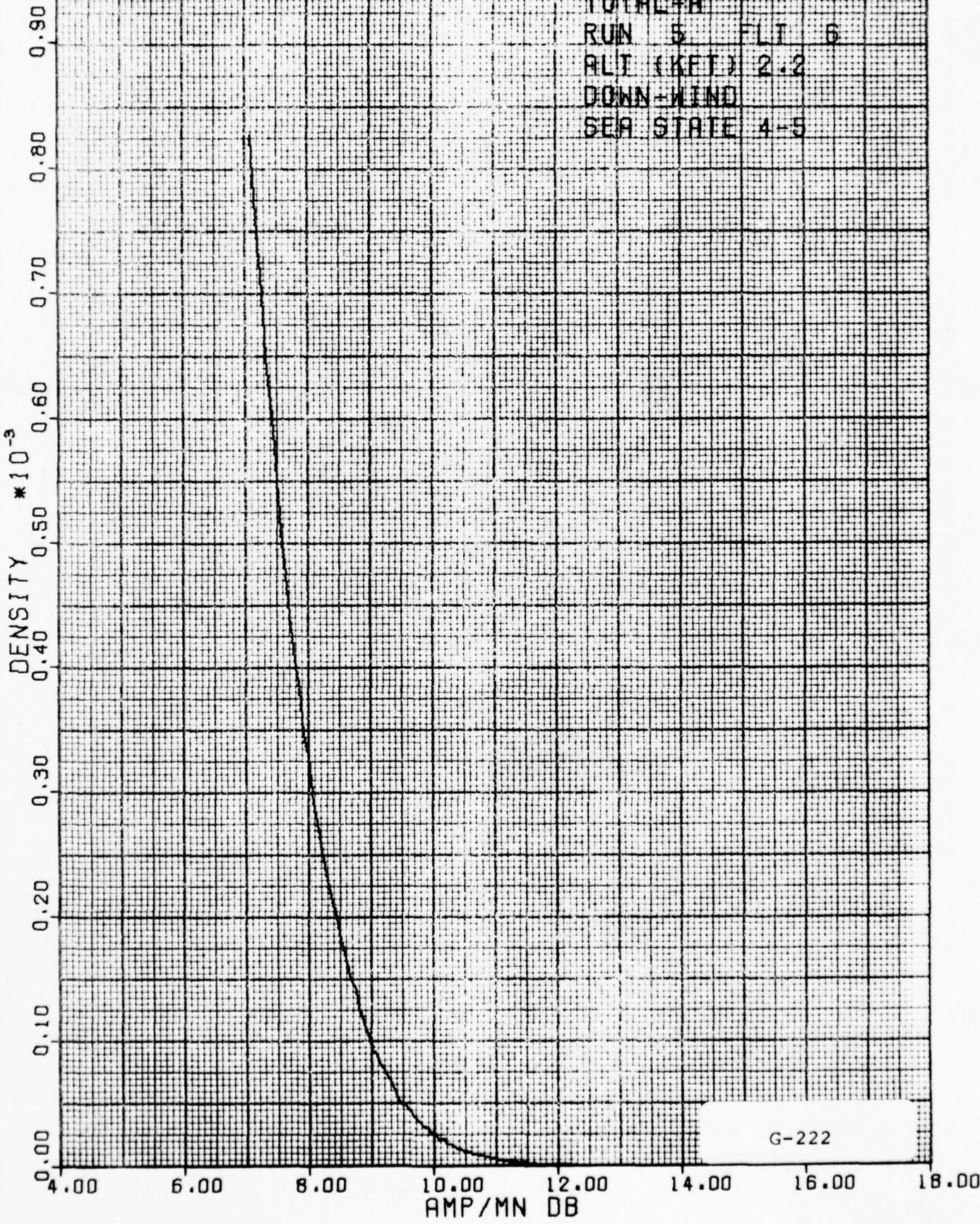
TOTAL-R

RUN 5 FLI 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



PDF TAIL

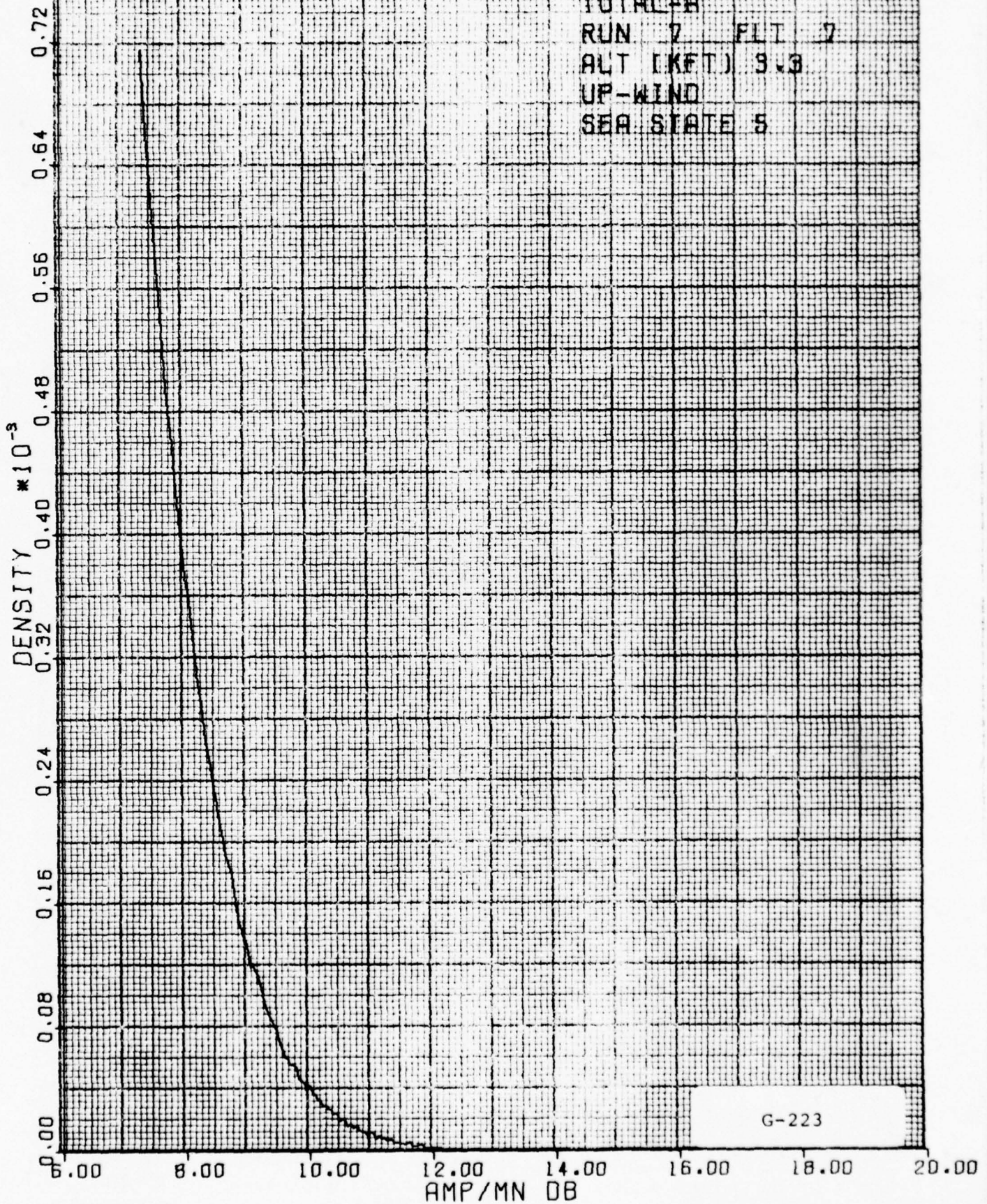
TOTAL-A

RUN 7 FLT 7

ALT (KFT) 9.3

UP-WIND

SEA STATE 5



PDF TAIL

TOTAL-A

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4

DEV RTY $\times 10^3$

0.9
0.8
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00

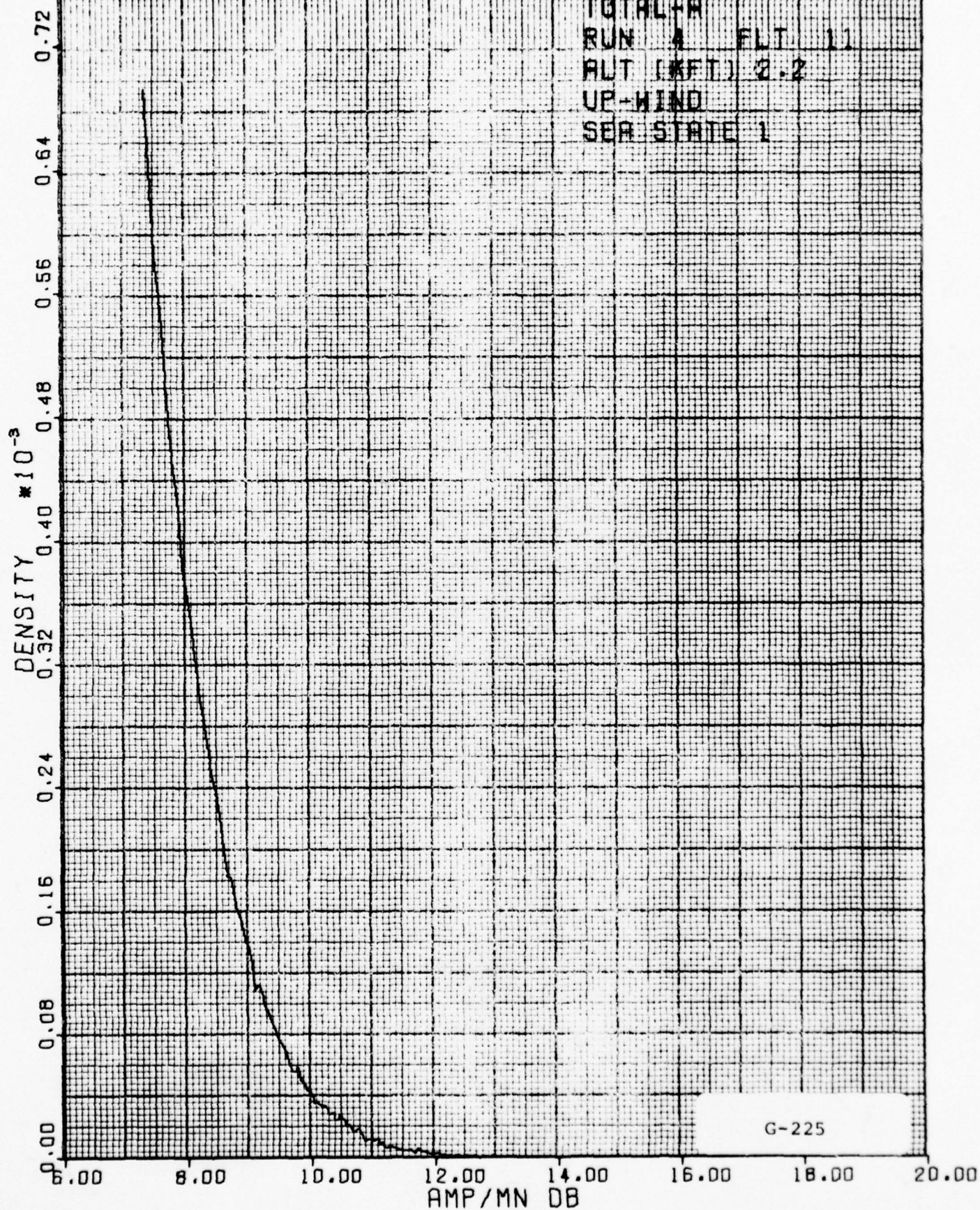
AMP/MN DB

G-224



PDF TAIL

TOTAL-R
RUN 4 FLT 11
ALT (KFT) 2.2
UP-WIND
SEA STATE 1



G-225

PDF TAIL

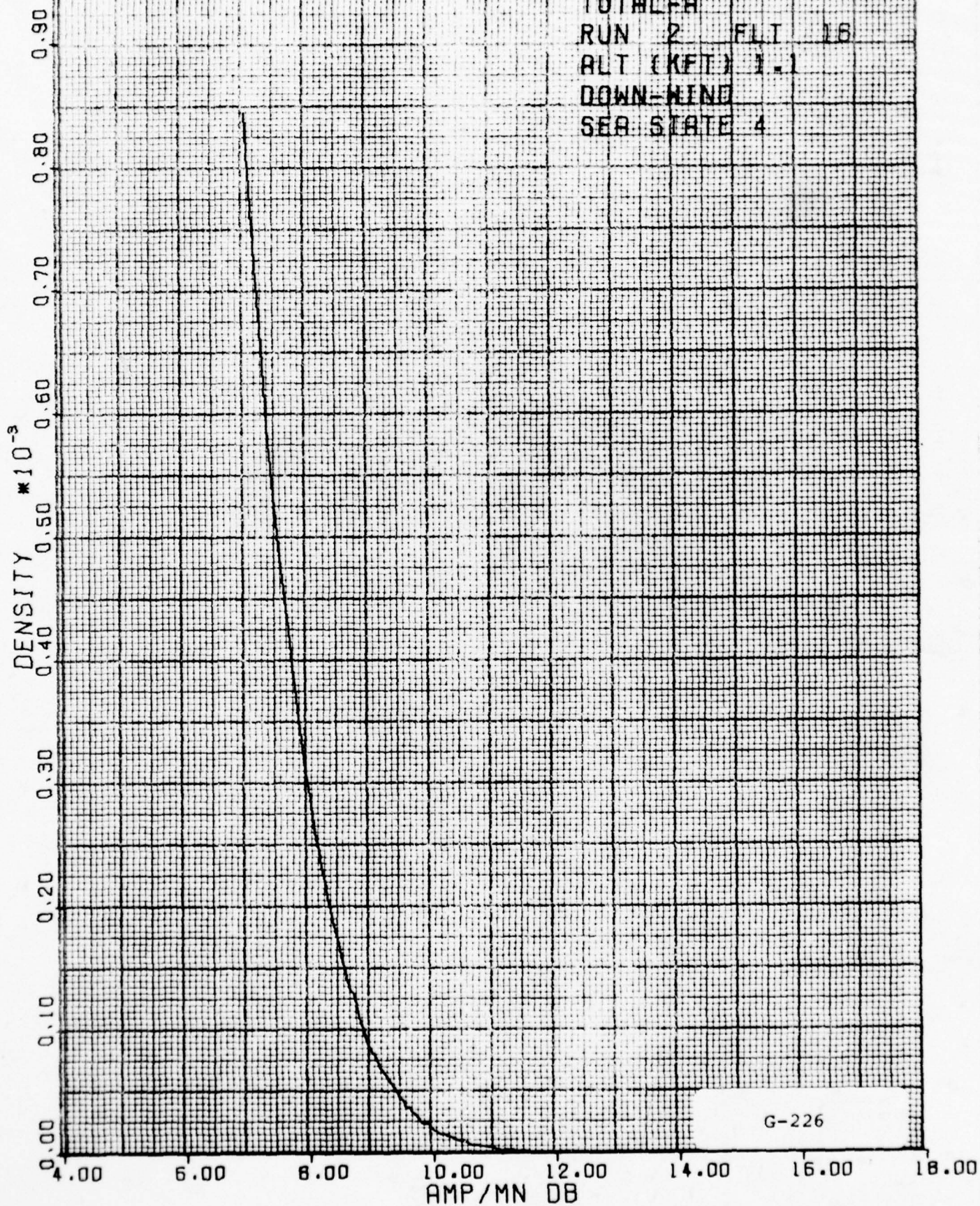
TOTAL-A

RUN 2 FLI 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



G-226

PDF TAIL

TOTAL-A

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4

DENSITY $\times 10^{-3}$

0.72

0.64

0.56

0.48

0.40

0.32

0.24

0.16

0.08

0.00

6.00

8.00

10.00

12.00

14.00

16.00

18.00

20.00

AMP/MN DB

G-227

UNCLASSIFIED

1.1.10 Histograms TOTAL PDF TAIL

All valid clutter data for representative runs is included. The lack of a suffix after TOTAL indicates no normalization procedures were used on the data. The vertical axis is probability density. Only the tail is displayed to give better dynamic range. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

PDF TAIL

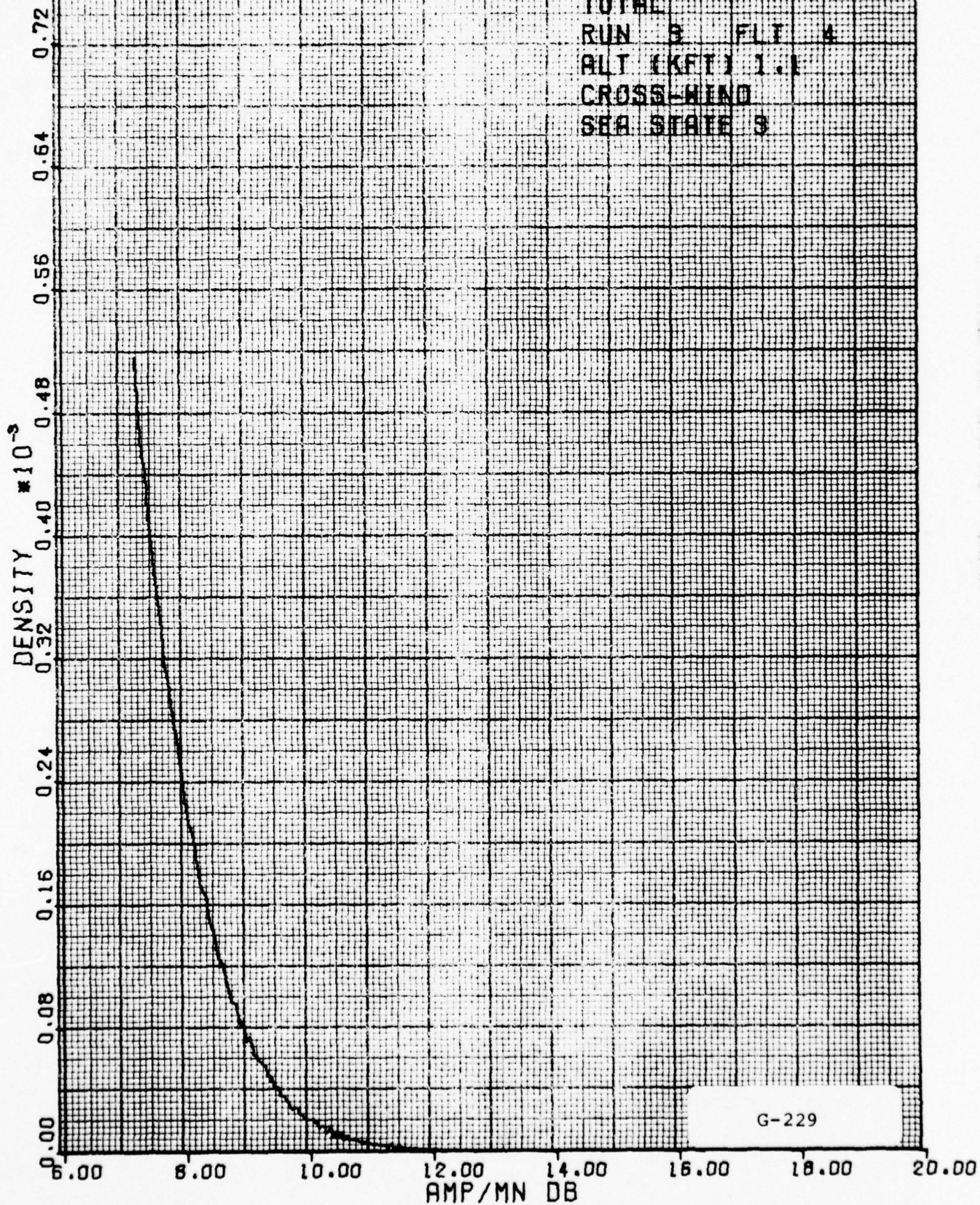
TOTAL

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



G-229

PDF TAIL

TOTAL

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5

DENSITY $\times 10^{-3}$

0.72
0.64
0.56
0.48
0.40
0.32
0.24
0.16
0.08
0.00

AMP/MN DB

G-230

4.00 6.00 8.00 10.00 12.00 14.00 16.00 18.00

PDE TAIL

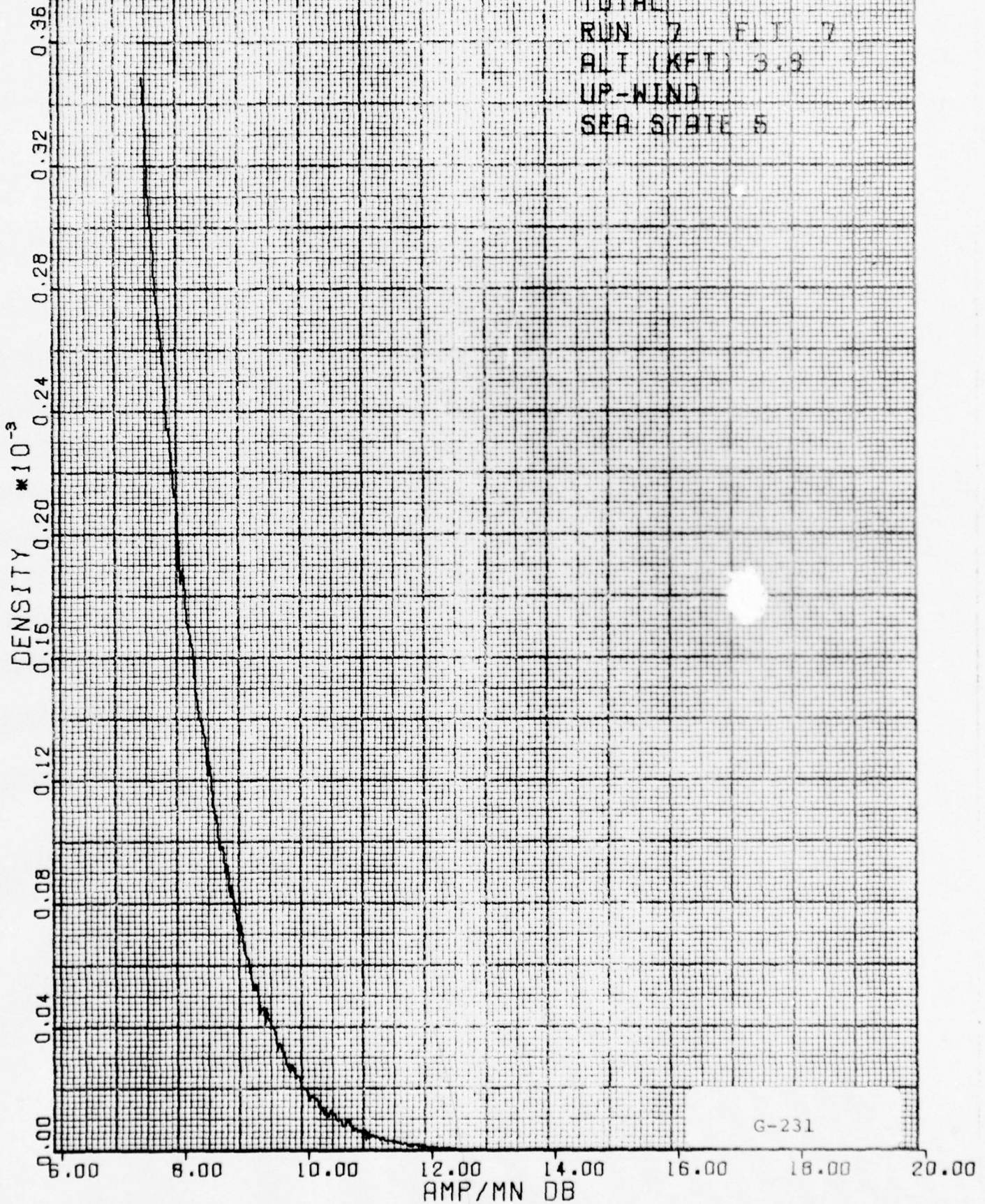
TOTAL

RUN 7 FLT 7

ALT (KFT) 3.8

UP-WIND

SEA STATE 5



PDF TAIL

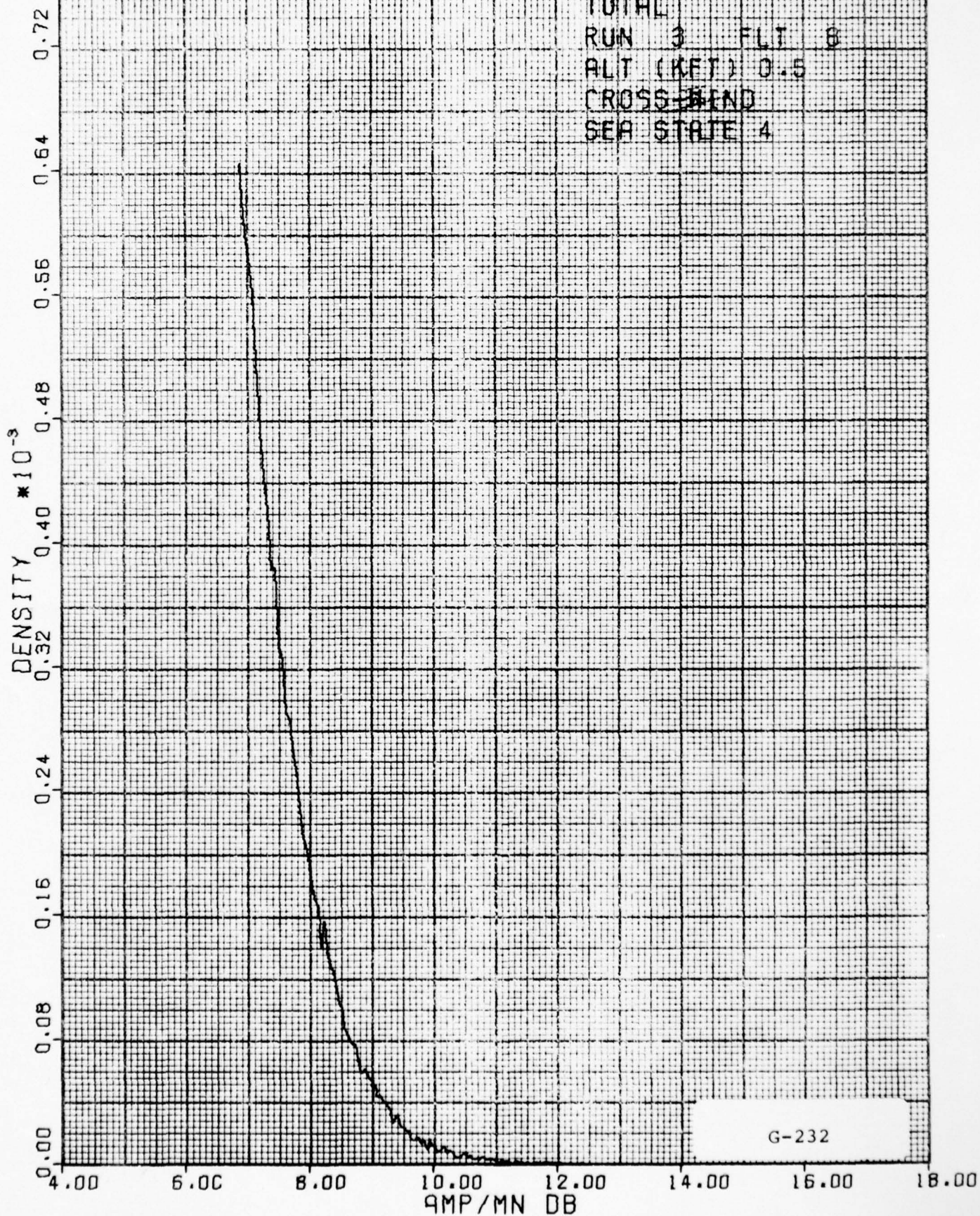
TOTAL

RUN 3 FLT 8

ALT (KFT) 0.5

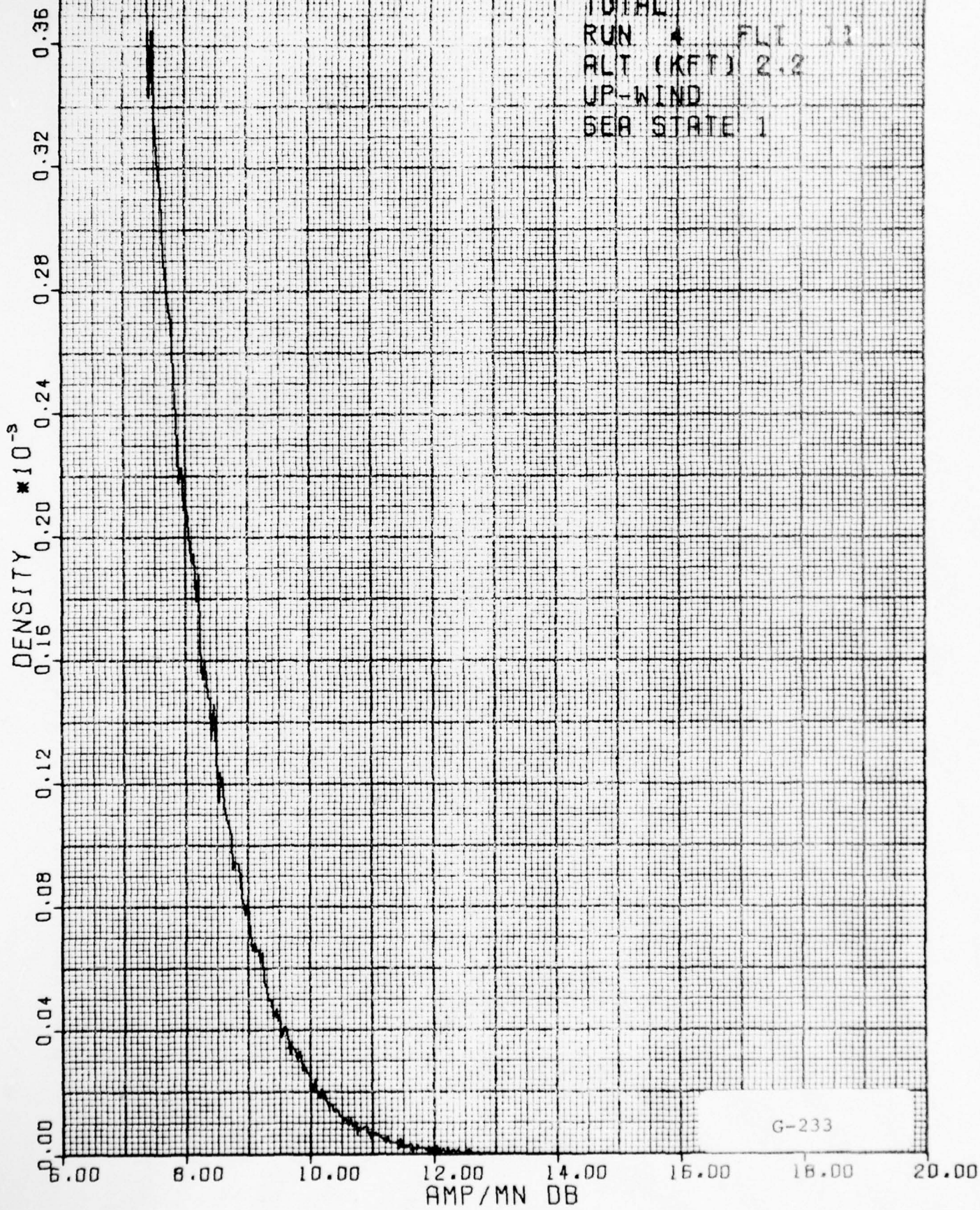
CROSS-~~WIND~~

SEA STATE 4



PDF TAIL

TOTAL
RUN 4 FLT 11
ALT (KFT) 2.2
UP-WIND
SEA STATE 1



G-233

PDE TAIL

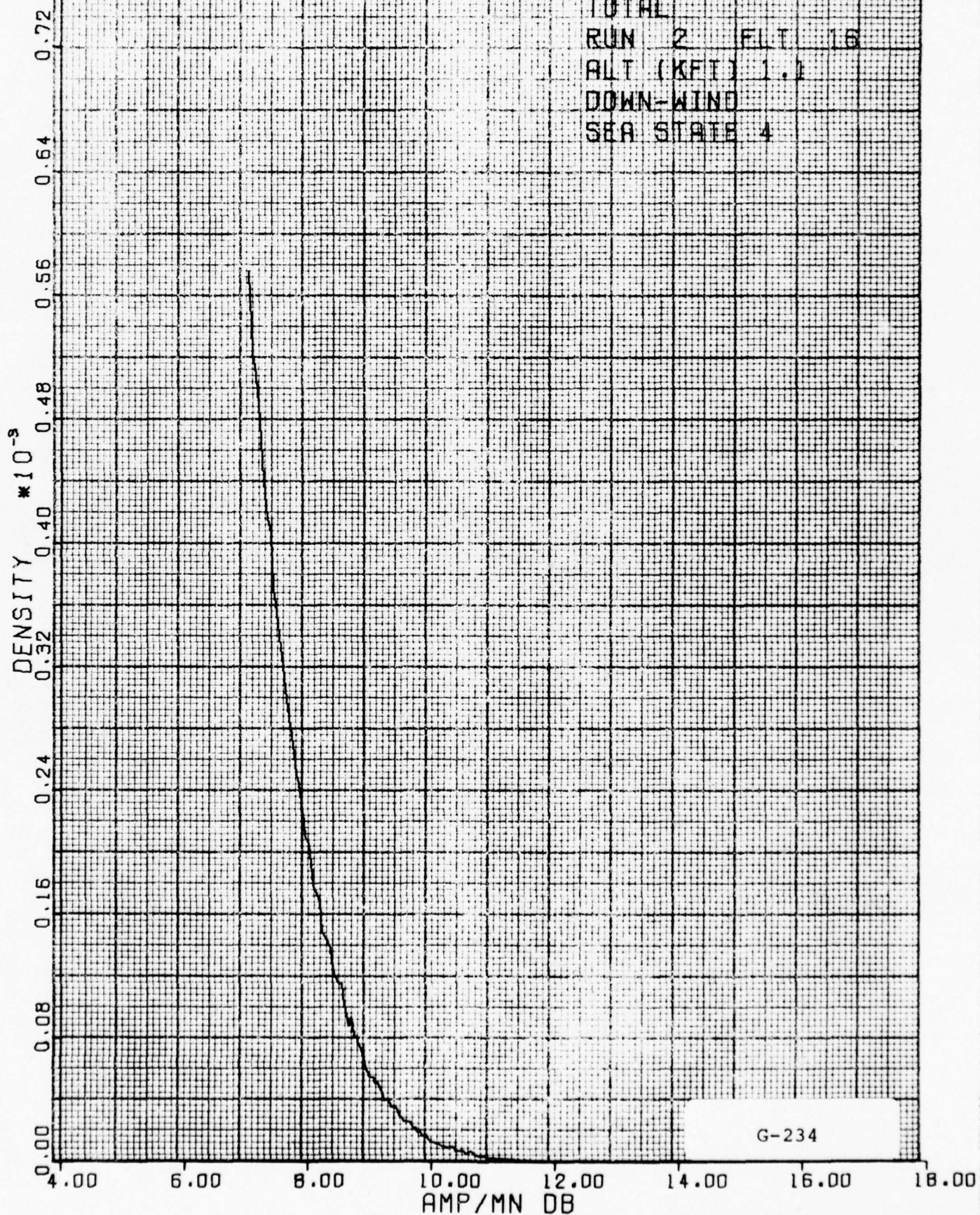
TOTAL

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



G-234

PDF TAIL

TOTAL

RUN 4 FLI 17

ALT (KFI) 2.8

UP-WIND

SEA STATE 4

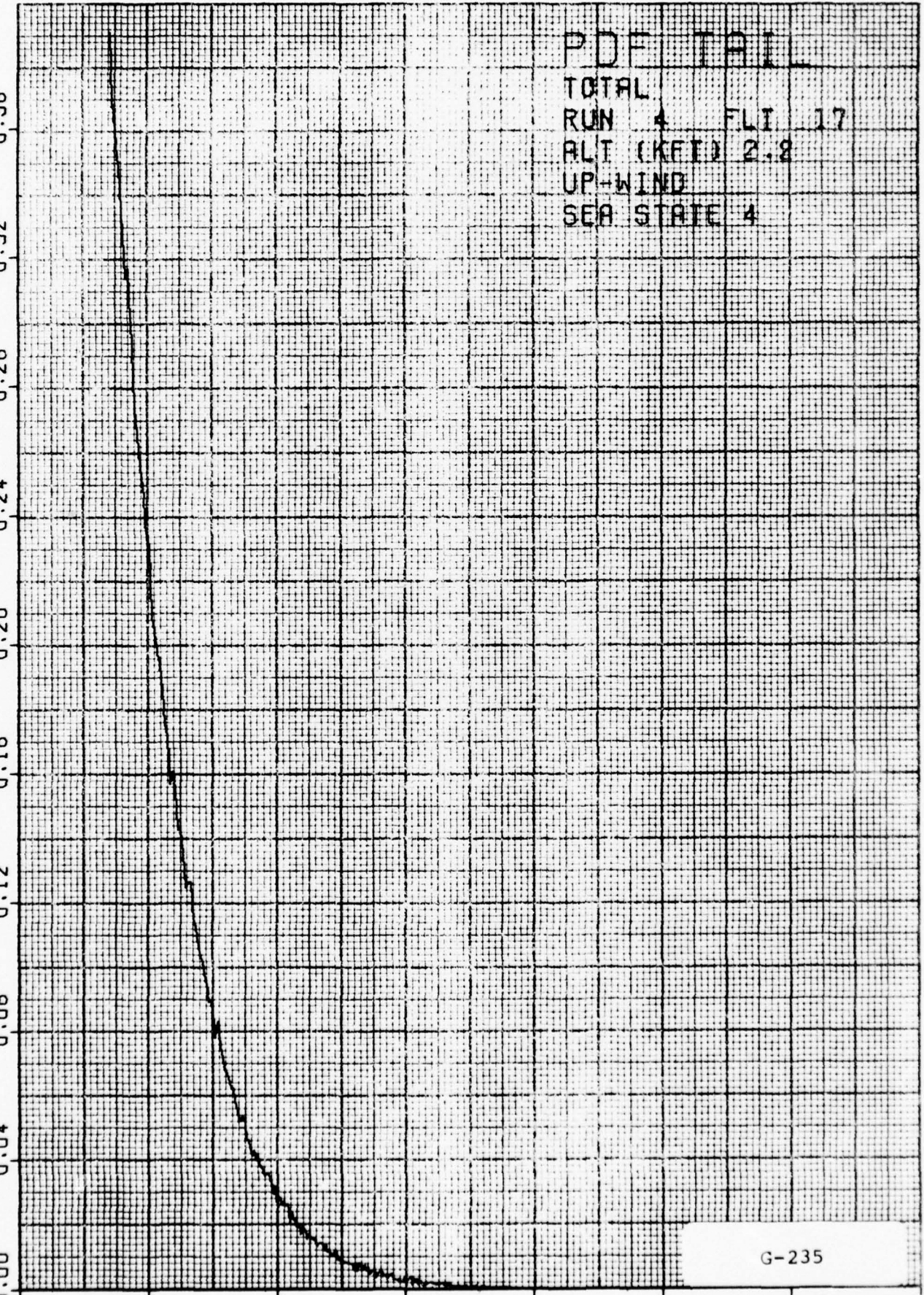
DENSITY $\times 10^{-3}$

0.36
0.32
0.28
0.24
0.20
0.16
0.12
0.08
0.04
0.00

6.00 8.00 10.00 12.00 14.00 16.00 18.00 20.00

AMP/MN DB

G-235



UNCLASSIFIED

1.1.11 Histograms TOTAL A Q = 1-DIST

All valid clutter data for representative runs is included. The suffix (A) after TOTAL indicates the histograms were first combined into range gate histograms then normalized by the range gate mean. These range gate mean histograms were then combined to form the total histogram. "A" normalization removes most hardware biases in the data. The vertical axis is Q or one minus the cumulative distribution. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

1-DIST

TOTAL-A

RUN 8 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3

Q(X)

0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

-10.00 -6.00 -2.00 2.00 6.00 10.00 14.00 18.00
AMP/MN DB

G-237

1-DIST

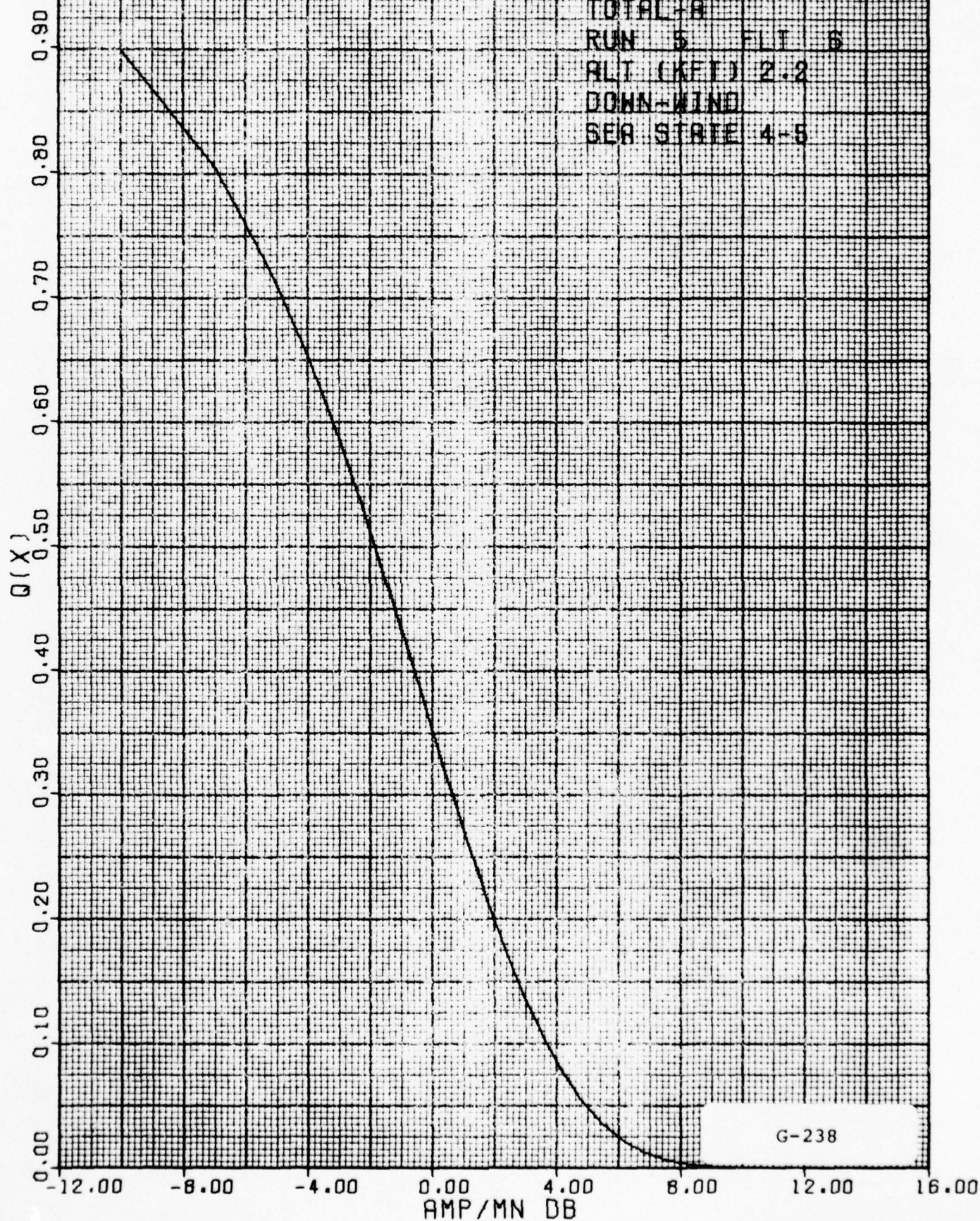
TOTAL-R

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



G-238

1-DIST

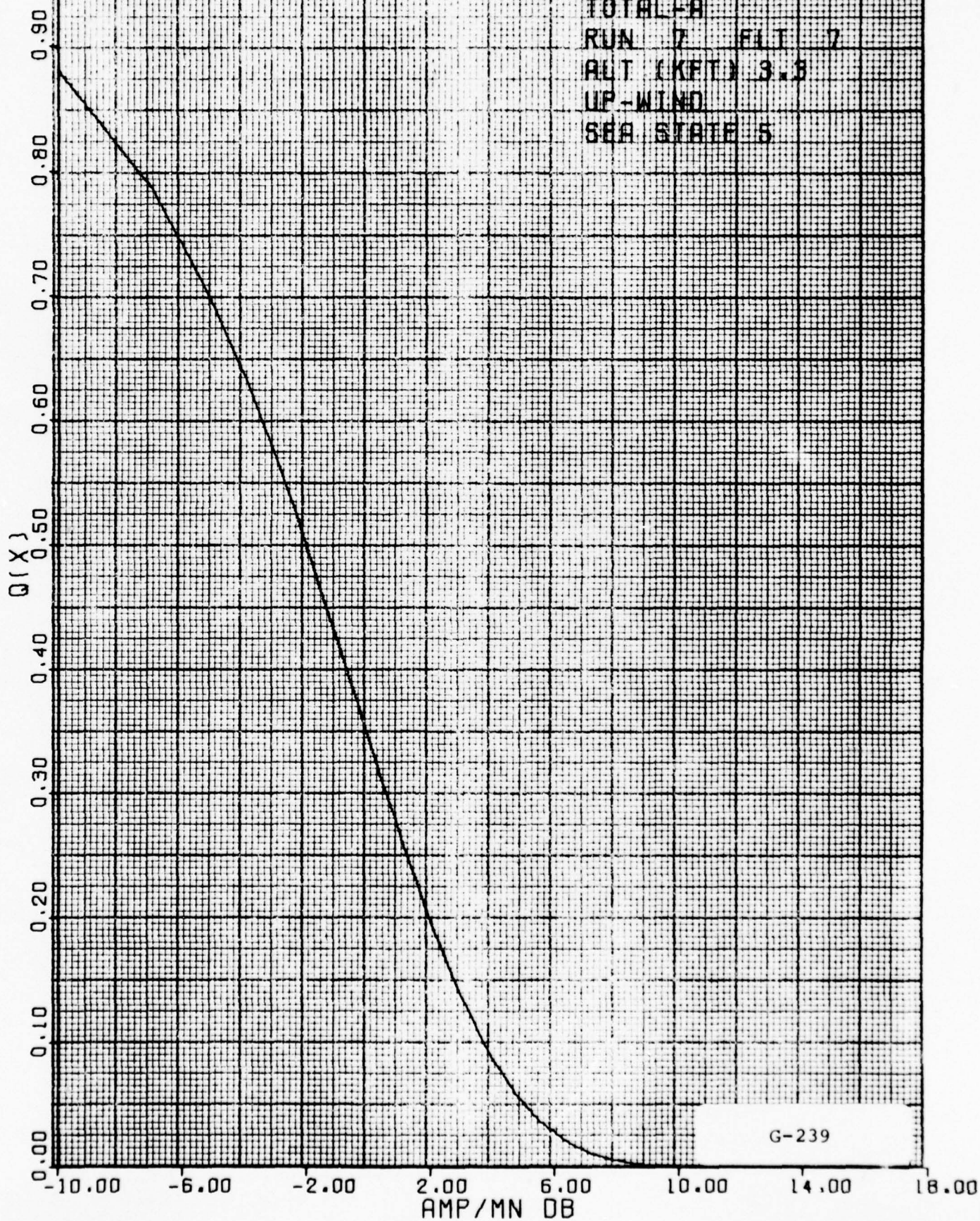
TOTAL-A

RUN 7 FLT 7

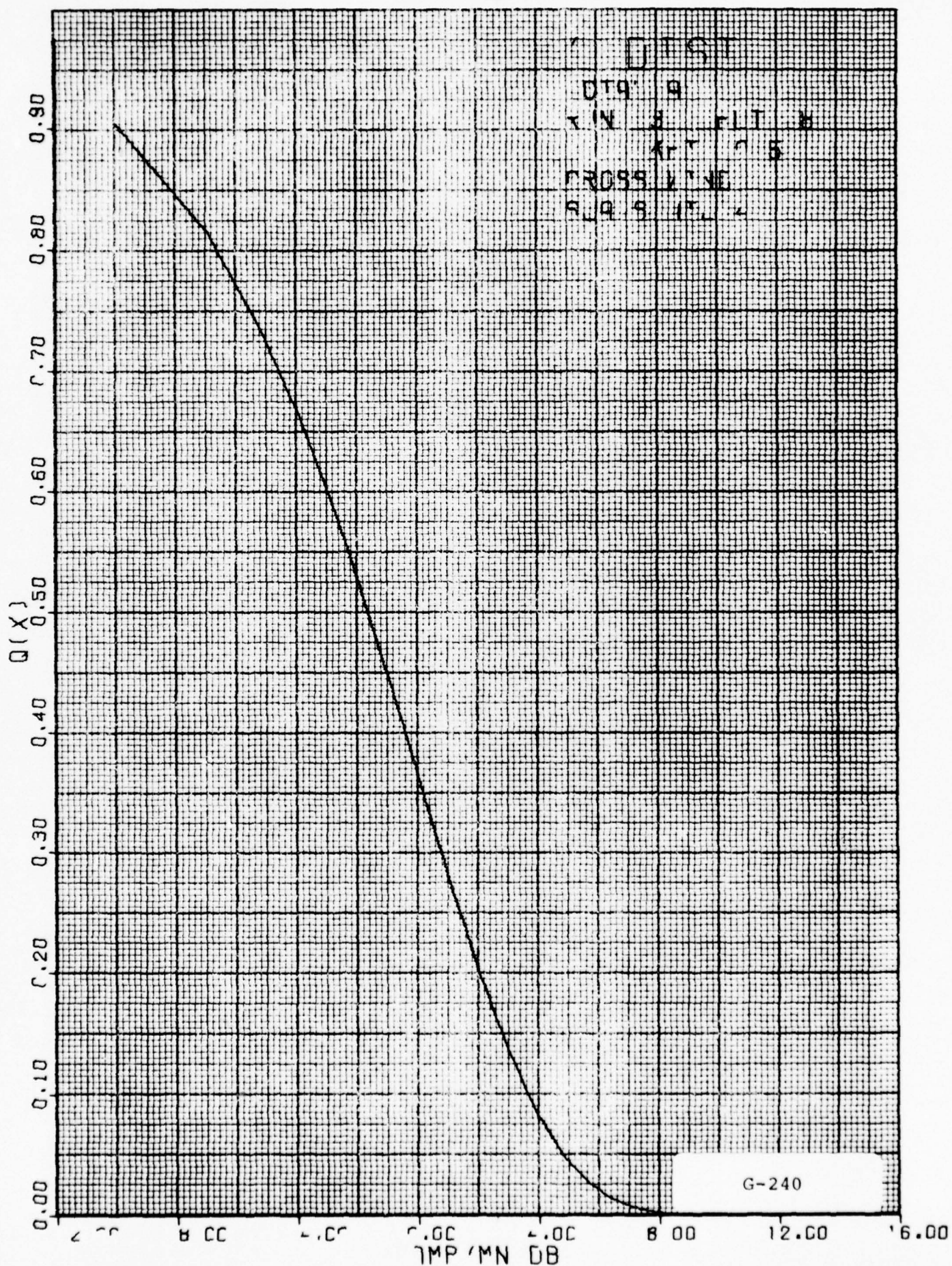
ALT (KFT) 3.3

UP-WIND

SEA STATE 5



G-239



1-DIST

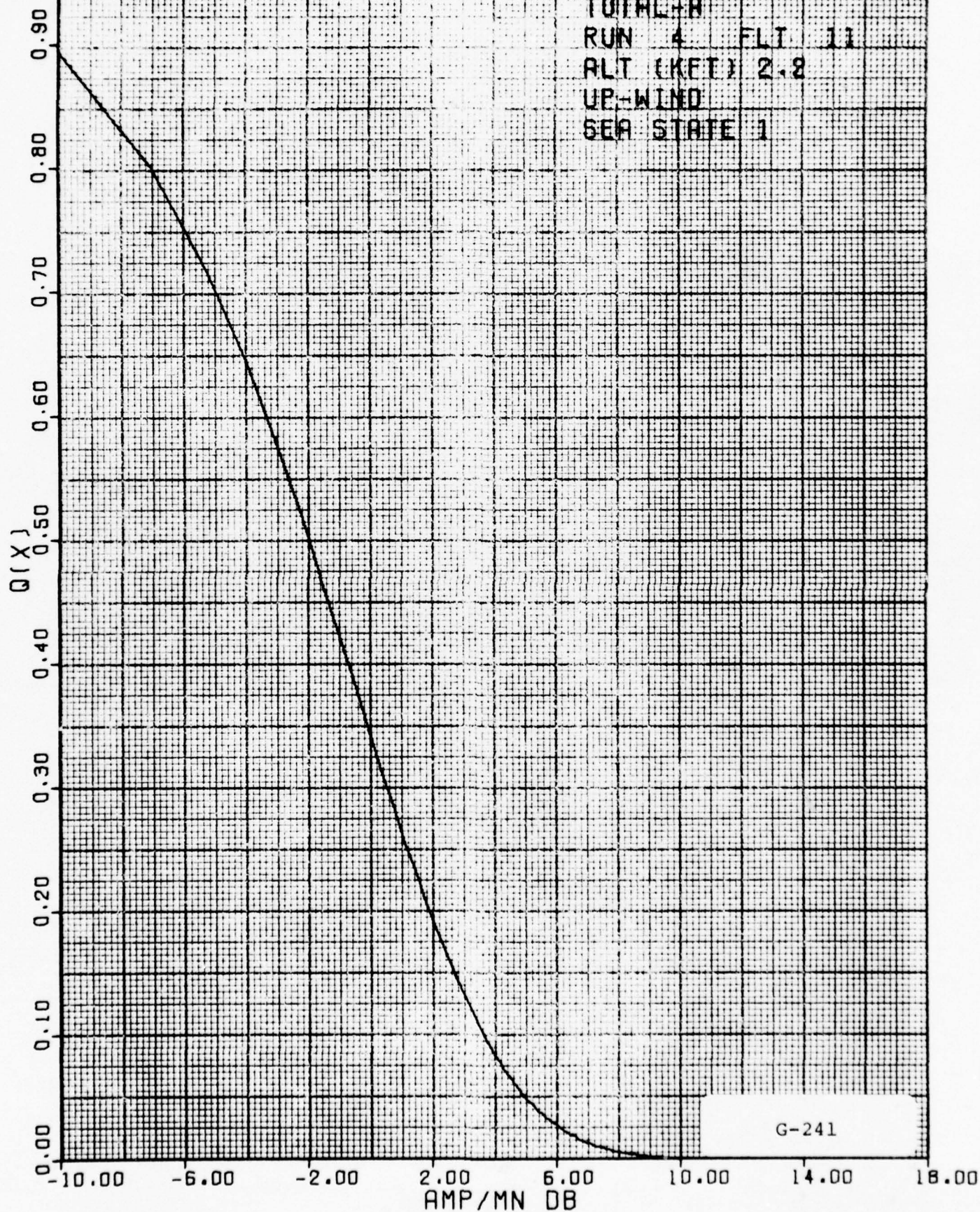
TOTAL-R

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1



1-DIST

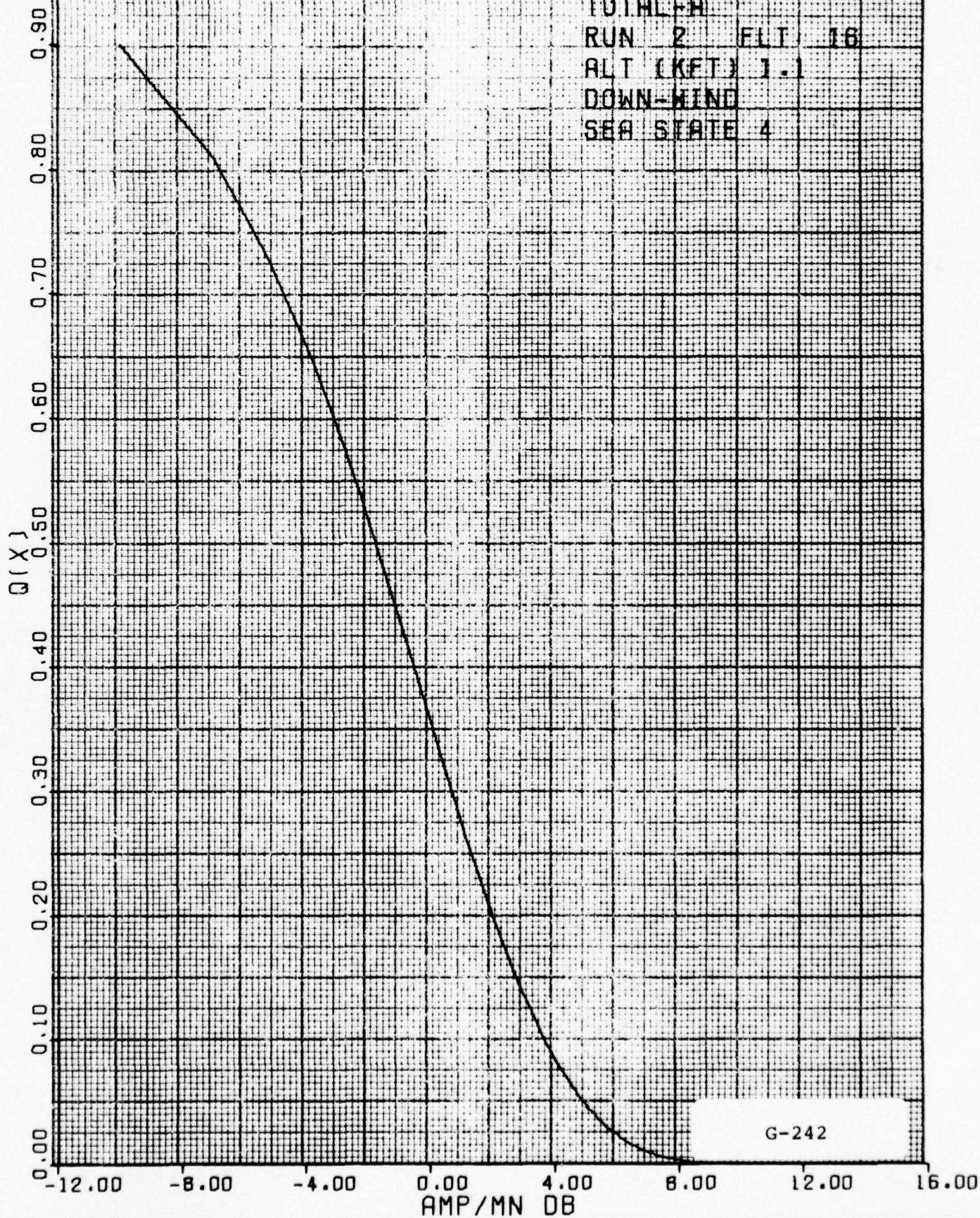
TOTAL-A

RUN 2 FLT 18

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



G-242

1-DIST

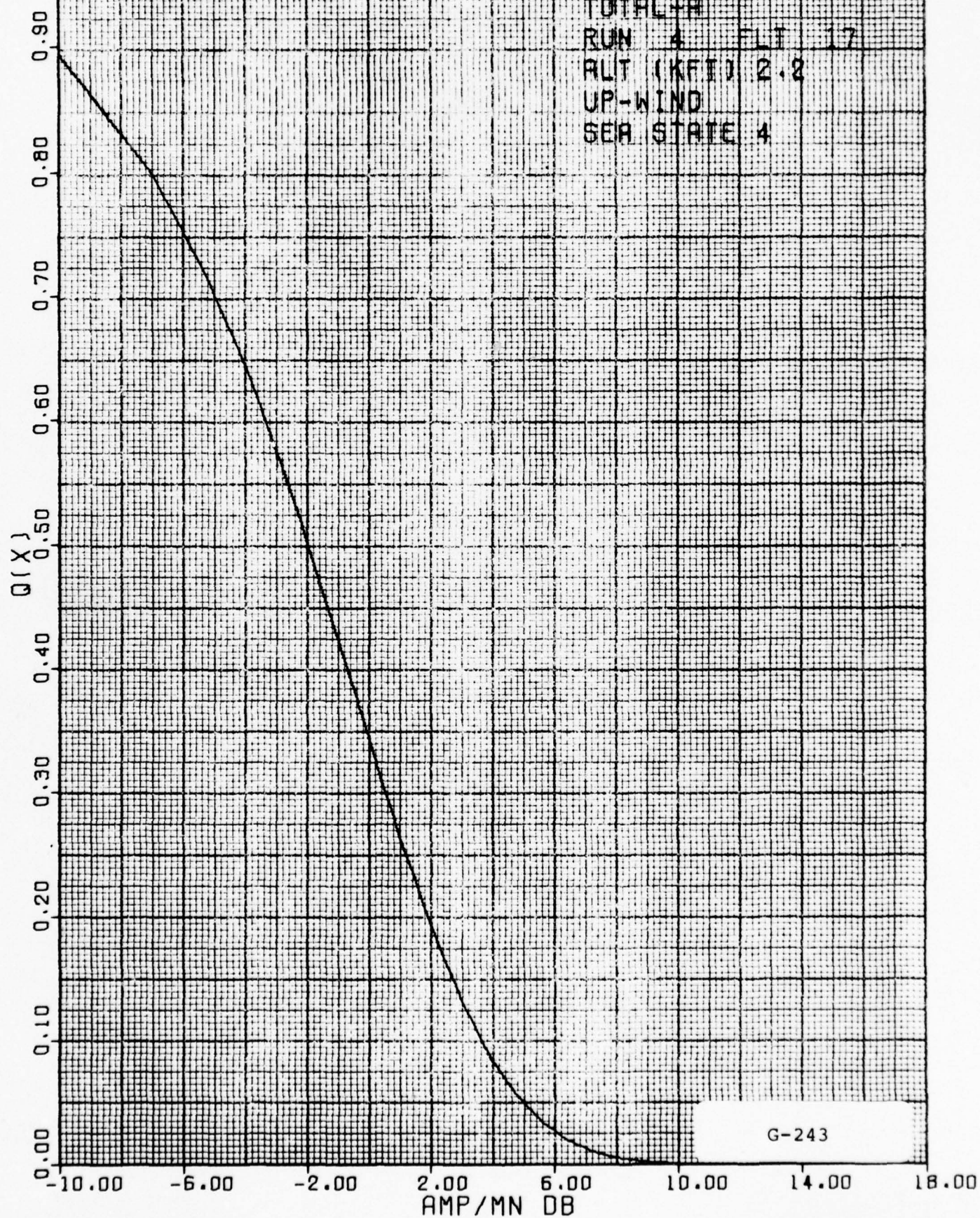
TOTAL-R

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-243

UNCLASSIFIED

1.1.12 Histograms TOTAL Q = 1-DIST

All valid clutter data for representative runs is included. The lack of a suffix after TOTAL indicates no normalization procedures were used on the data. The vertical axis is Q or one minus the cumulative distribution. The horizontal axis is the clutter power per cell in dB referenced to the data mean.

1-DIST

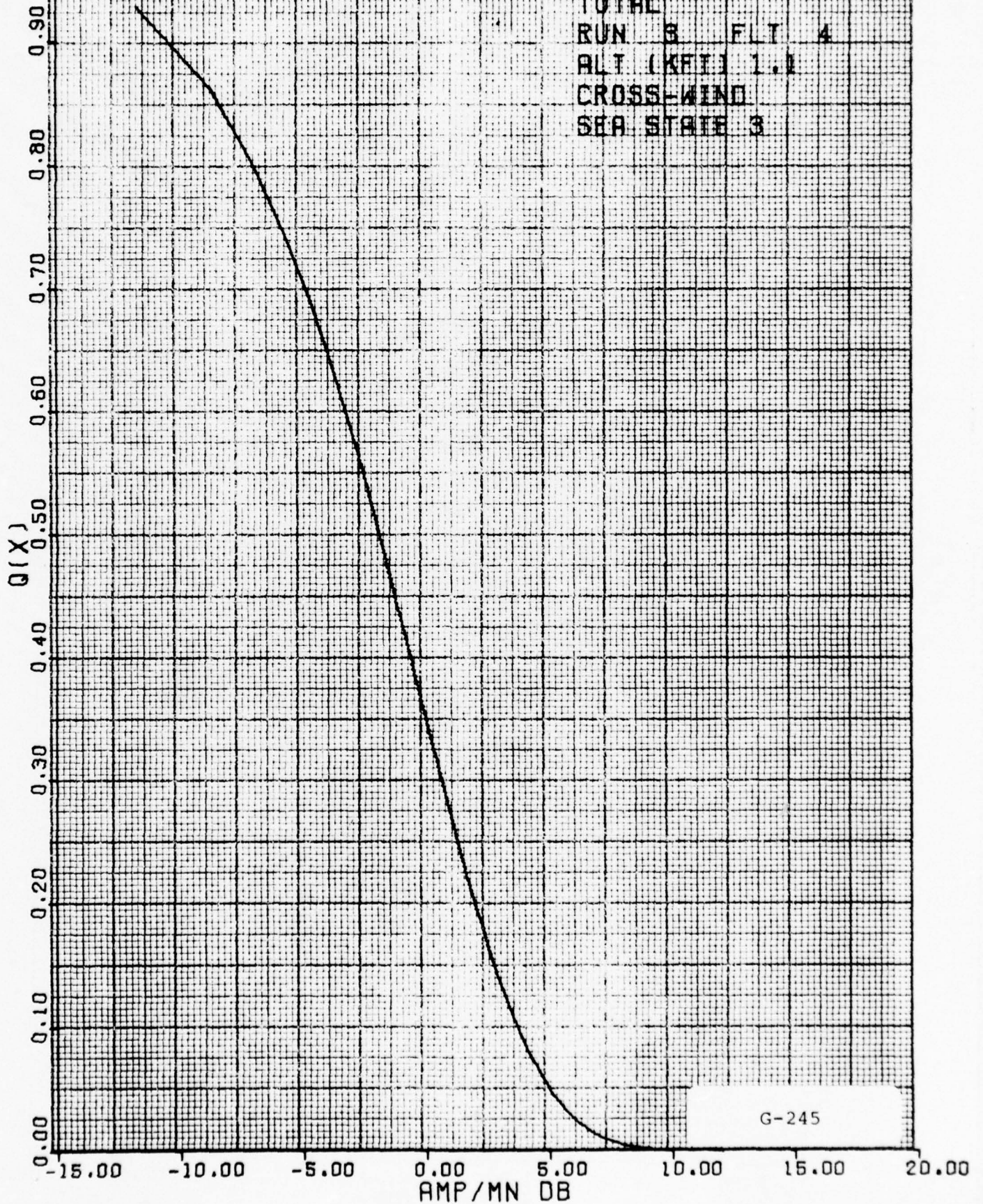
TOTAL

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



1-DIST

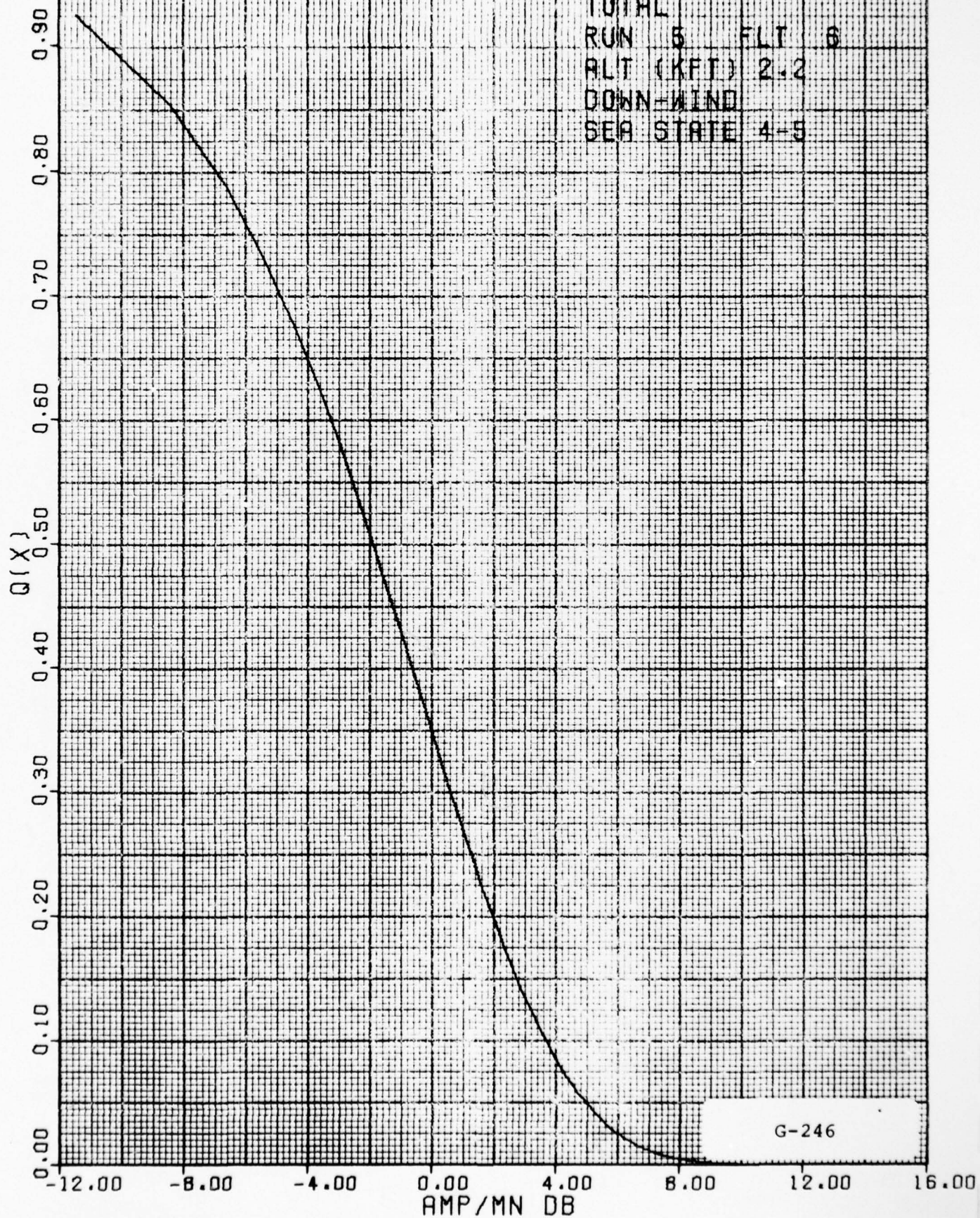
TOTAL

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



1-DIST

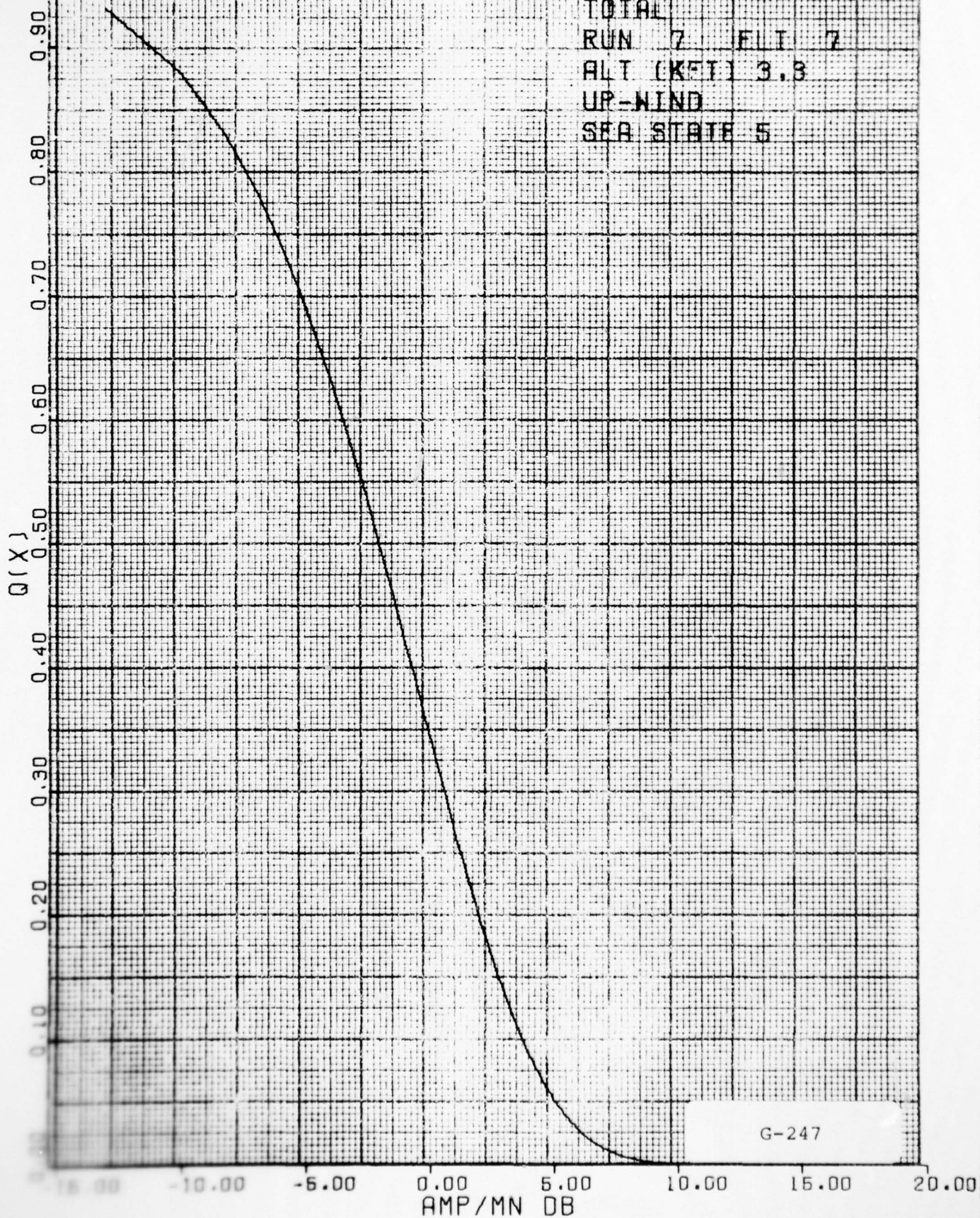
TOTAL

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



G-247

1-DIST

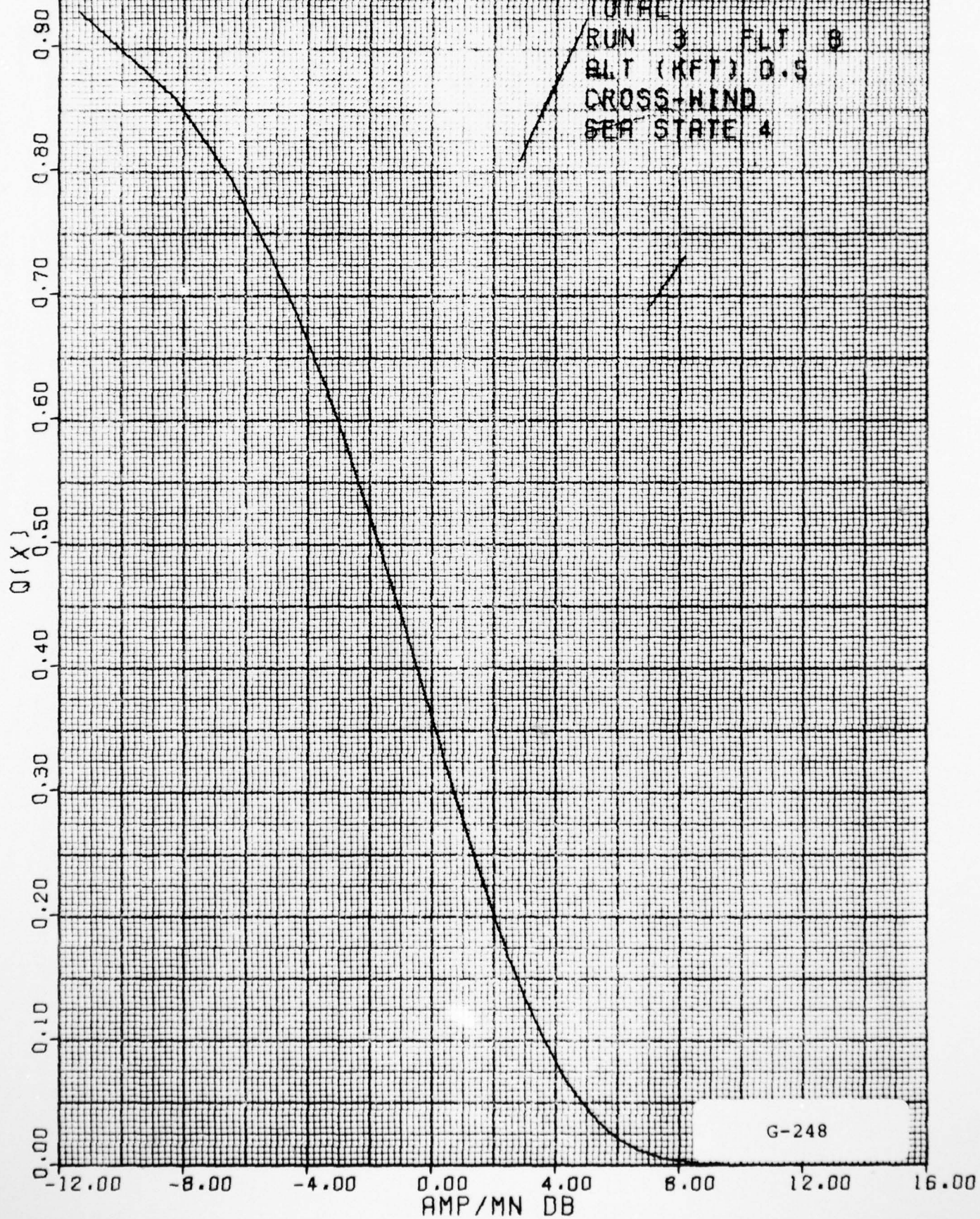
TOTAL

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



G-248

1-DIST

TOTAL

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1

Q(X)

0.90
0.80
0.70
0.60
0.50
0.40
0.30
0.20
0.10
0.00

-15.00 -10.00 -5.00 0.00 5.00 10.00 15.00 20.00

AMP/MN DB

G-249

1-DIST

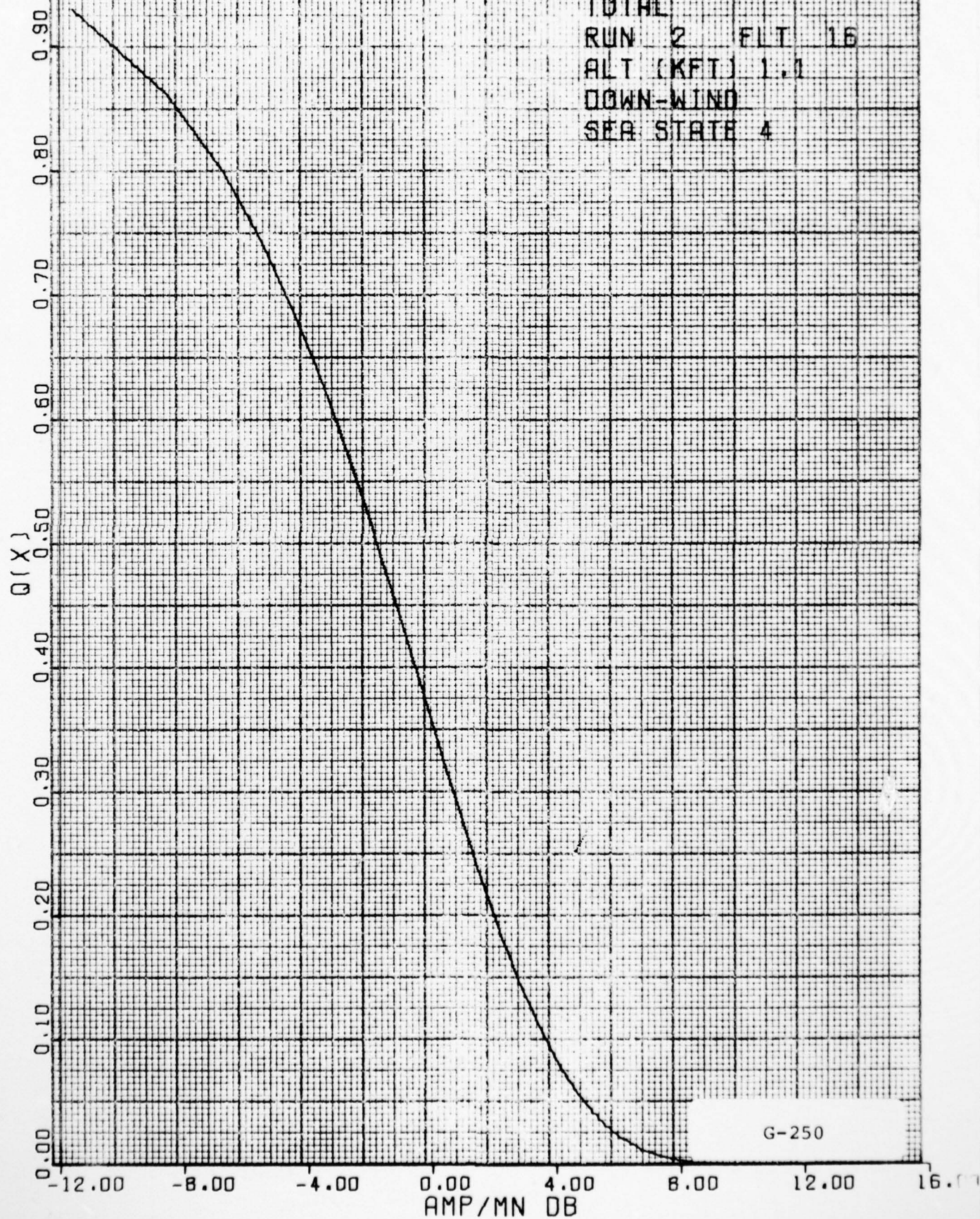
TOTAL

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



G-250

1-DIST

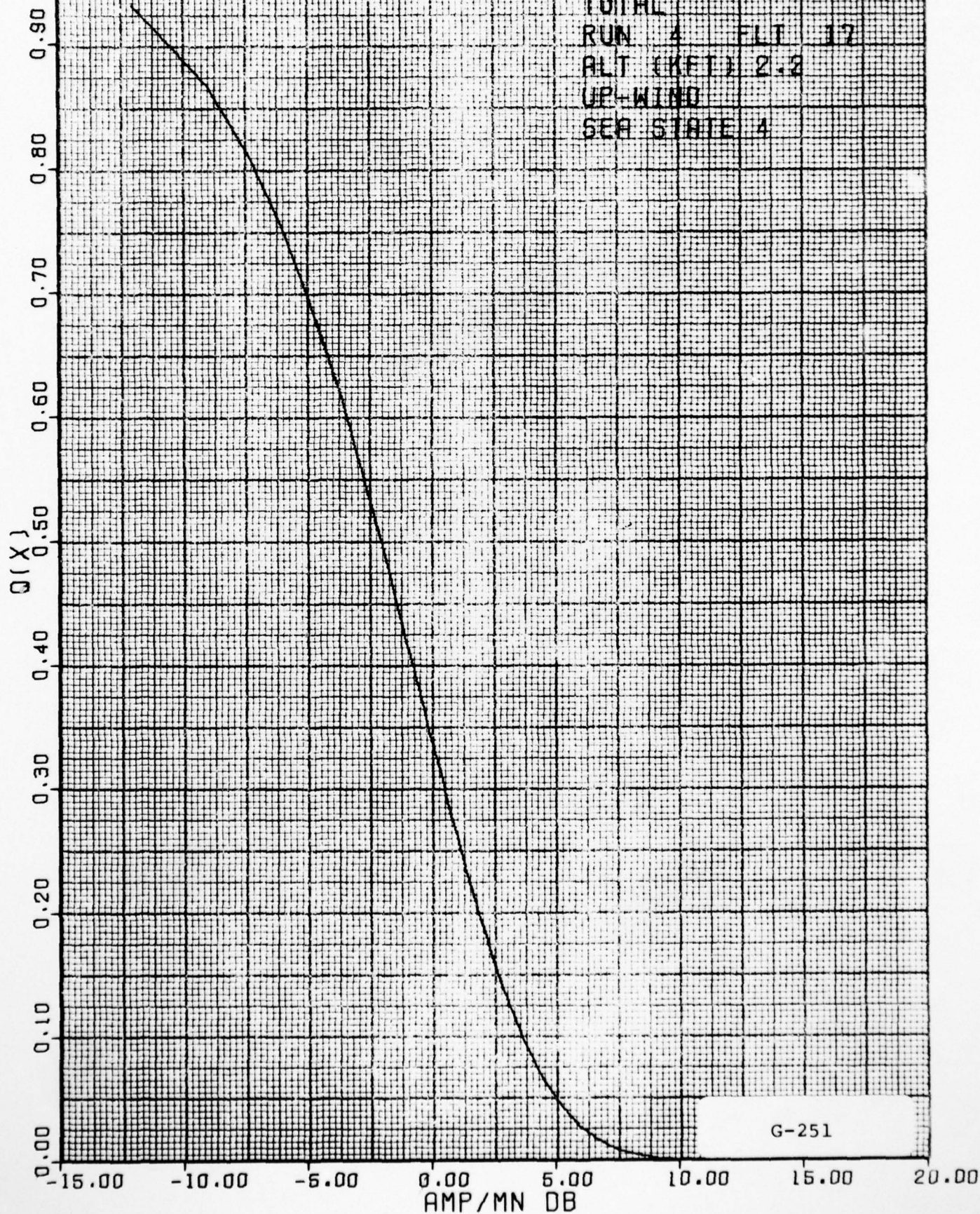
TOTAL

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-251

UNCLASSIFIED

1.2 Statistical Parameters by Flight and Run

Statistical parameters are listed here sequentially by flight and run. Flight and run numbers are found above each data column. The parameters are in sequence:

1. 1st absolute moment = mean
2. 2nd absolute moment
3. 3rd absolute moment
4. 4th absolute moment
5. maximum value (in dB)
6. 2nd central moment (σ^2)
7. 3rd central moment
8. 4th central moment
9. median (in dB)
10. 10^{-1} point on $Q = 1-P(x)$ (in dB)
11. 10^{-2} point on $Q = 1-P(x)$ (in dB)
12. 10^{-3} point on $Q = 1-P(x)$ (in dB)
13. 10^{-4} point on $Q = 1-P(x)$ (in dB)
14. 10^{-5} point on $Q = 1-P(x)$ (in dB)
15. 10^{-6} point on $Q = 1-P(x)$ (in dB)

The first subsection contains "A" normalized statistics, i.e., each range gate mean normalized to mean = 10 before combining. The second subsection is the raw total histogram statistics.

1.2.1 Mean Normalized Statistics

The following eight pages contain Mean Normalized Statistics for Runs 401A through 1708A.

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	401A	403A	602A	603A	604A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.0052	10.0035	10.003901	10.00357	10.00367
2	220.6452	220.2120	222.617990	216.19259	210.53893
3	7887.0992	8375.0132	8306.244528	7646.03596	7014.42245
4	430396.6945	539669.6095	462407.570497	399507.23172	329775.36952
5	27.9795	27.1933	24.377505	25.39076	24.23245
6	120.4016	120.0466	122.438147	116.02766	110.36944
7	3266.9955	3768.1531	3627.099786	3159.86184	2697.99100
8	217091.9720	306638.5443	233562.168483	193244.14382	145396.48153
9	7.7815	7.7815	7.781512	7.78151	7.78151
10	13.6172	13.6172	13.617278	13.61727	13.61727
11	17.0757	17.0757	17.160033	16.98970	16.90196
12	19.1301	19.2449	19.395192	19.13813	18.86490
13	20.6818	21.3987	21.072009	20.74181	20.37426
14	22.1748	23.4635	22.430380	22.20108	21.61368
15	24.8572	25.2504	23.654879	23.85606	22.74157

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	605A	606A	608A	609A	701A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00390	10.00387	10.00392	10.00390	10.00444
2	221.39334	220.70304	219.80366	222.42025	281.48659
3	8122.29036	8070.76373	7943.33805	8256.52175	19171.21607
4	437494.91474	436620.90591	418603.22833	454600.47494	2965227.43945
5	24.26511	25.83198	24.42479	24.95544	28.45718
6	121.21320	120.52443	119.62280	122.24043	181.28174
7	3479.91574	3449.12272	3348.69611	3583.31464	12724.12174
8	215277.90684	216053.26777	202594.61473	227626.94366	2336708.63577
9	7.78151	7.78151	7.78151	7.78151	6.98970
10	13.61727	13.61727	13.61727	13.61727	13.61727
11	17.07570	17.07570	17.07570	17.16003	17.92391
12	19.29414	19.29418	19.24279	19.34498	21.10589
13	20.93421	20.89905	20.86359	21.00370	23.83815
14	22.27886	22.27886	22.14843	22.35528	26.25312
15	23.36459	23.67355	23.32438	23.48304	27.87460

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	702A	703A	704A	706A	707A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00379	10.00444	10.00416	10.00439	10.00524
2	297.00457	288.36141	248.90947	274.01014	235.11646
3	25249.47756	21580.94735	12424.79708	18791.74583	9738.85732
4	5348088.87318	3949482.21101	1179530.80735	3467086.61936	644577.52988
5	29.02271	29.05795	27.82472	29.52308	26.19093
6	197.62959	188.15651	148.71737	173.80768	135.07461
7	18312.77905	14927.39654	6956.10965	12569.20124	4678.09183
8	4406116.85595	3228608.65260	801578.99270	2849273.60858	365938.51306
9	6.98970	6.98970	7.78151	6.98970	7.78151
10	13.42422	13.61727	13.61727	13.61727	13.61727
11	17.99340	17.99340	17.55874	17.78151	17.32393
12	21.61368	21.30333	20.33423	20.82785	19.73127
13	24.69822	24.16640	22.69512	23.76574	21.61368
14	26.97229	26.61812	24.59392	27.23455	23.16459
15	28.47572	28.70403	26.14477	27.67897	24.82873

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	708A	709A	801A	802A	803A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00400	10.00303	10.00369	10.00379	10.00364
2	231.84978	301.97251	209.77107	220.04199	207.41050
3	9627.87511	67340.96273	6925.43320	11183.20036	6725.54471
4	672105.66274	50127627.14111	320214.48746	2927539.69553	306436.45146
5	27.16837	29.40018	23.80211	29.21166	25.26339
6	131.66519	201.83278	109.60070	119.86709	107.24258
7	4671.50521	60279.65355	2632.05559	6581.41954	2503.04704
8	395891.18069	47583460.11697	138936.04668	2581971.74780	131743.32040
9	7.78151	7.78151	7.78151	7.78151	7.78151
10	13.61727	13.61727	13.61727	13.61727	13.61727
11	17.32393	17.40362	16.81241	16.90196	16.81241
12	19.73127	20.08600	18.86490	19.08485	18.75061
13	21.73186	23.89166	20.29383	21.27104	20.25305
14	23.57934		21.49219	26.18048	21.19879
15	25.35294		22.57678		22.50420

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	1104A	1105A	1107A	1108A	1109A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00384	10.00375	10.00378	10.00375	10.00403
2	236.86085	218.11440	218.72221	217.50293	236.18797
3	12107.73533	8931.40808	7872.95190	7846.87569	9269.66019
4	1849982.86751	1167550.41588	415050.94070	460083.17727	523019.38399
5	26.91081	29.13813	24.87138	28.85924	24.37750
6	136.68373	117.94133	118.54783	117.33008	136.00204
7	7000.93548	4387.51038	3310.80065	3315.33848	4183.01761
8	1477506.60788	910976.28296	201215.86158	246800.74328	263753.07142
9	7.78151	7.78151	7.78151	7.78151	7.78151
10	13.61727	13.61727	13.61727	13.61727	13.80211
11	17.32393	16.98970	17.07570	16.98970	17.32393
12	19.82271	19.19078	19.24279	19.19078	19.49390
13	21.81843	21.10589	20.86359	20.86359	21.07209
14		24.08239	22.12187	22.30448	22.30448
15		28.77944	23.40444	23.48304	23.20144

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	1204A	1601A	1602A	1603A	1604A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00364	10.00354	10.00373	10.00365	10.00394
2	208.45582	212.32395	215.00772	212.46337	217.08136
3	6821.85107	7177.55690	7519.10114	7212.54695	7639.00217
4	313565.21386	343576.57791	384150.63809	348699.33441	396606.62656
5	25.15873	23.89166	24.36162	23.69215	27.07570
6	108.28773	112.16073	114.83550	112.29507	116.89930
7	2567.96731	2807.54073	3068.48638	2838.33558	3126.09994
8	135644.71959	153744.38460	182251.10168	157546.28959	191145.12587
9	7.78151	7.78151	7.78151	7.78151	7.78151
10	13.61727	13.61727	13.61727	13.61727	13.61727
11	16.81241	16.90194	16.98970	16.90194	16.98970
12	18.80813	18.92094	19.08485	18.97627	19.08485
13	20.33423	20.45322	20.71882	20.53078	20.64457
14	21.52288	21.67317	22.17483	21.78974	21.98657
15	22.64817	22.71841	23.56025	22.69512	23.76576

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MEAN NORMALIZED STATISTICS

RUN	1605A	1606A	1607A	1609A	1704A
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.00475139	10.00369	10.00381	10.00395	10.00405
2	461.85975928	218.18396	216.71221	225.29511	241.32406
3	144916.56077792	7809.58138	7610.84398	8555.39135	12746.36969
4	74982451.48940849409485.31077	384684.71084	384684.71084	485843.44477	2023699.34269
5	28.76217841	25.28916	23.97940	24.96929	27.85329
6	361.64071010	118.01347	116.53627	125.11280	141.13697
7	133052.17587362	3263.60195	3109.04118	3795.85157	7505.49397
8	69427035.06264687197867.06370	180133.69673	180133.69673	248630.01618	1628320.81832
9	7.78151250	7.78151	7.78151	7.78151	7.78151
10	13.42422681	13.61727	13.61727	13.61727	13.61727
11	17.07570176	17.07570	16.98970	17.16003	17.40362
12	21.46128036	19.19078	19.08485	19.44482	20.04321
13	27.80317312	20.82785	20.68185	21.13943	22.43038
14	28.05500858	22.17483	21.95899	22.47973	25.80924
15	28.18225894	23.28370	23.11753	23.69215	

UNCLASSIFIED

MEAN NORMALIZED STATISTICS

RUN	1706A	1707A	1708A
J	AA(J)	AA(J)	AA(J)
1	10.00450	10.00388	10.00390
2	659.01785	229.91132	224.21393
3	263711.04826	9918.45171	8586.91566
4	154791001.41090	1051436.64274	516519.22661
5	28.67467	28.08210	26.52246
6	558.80593	129.73205	124.03388
7	245925.93598	5020.31286	3859.84877
8	144597509.80562	762429.55278	277395.97426
9	6.98970	7.78151	7.78151
10	13.22219	13.61727	13.61727
11	17.55874	17.24275	17.16003
12	26.97229	19.63787	19.44482
13	28.60338	21.58362	21.30333
14		23.57934	22.85557
15			24.66867

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GENERAL DYNAMICS/POMONA CALIF POMONA DIV
TAGSEA PROGRAM. VOLUME IV. STANDARD CLUTTER ANALYSIS OUTPUTS. (U)
AUG 76

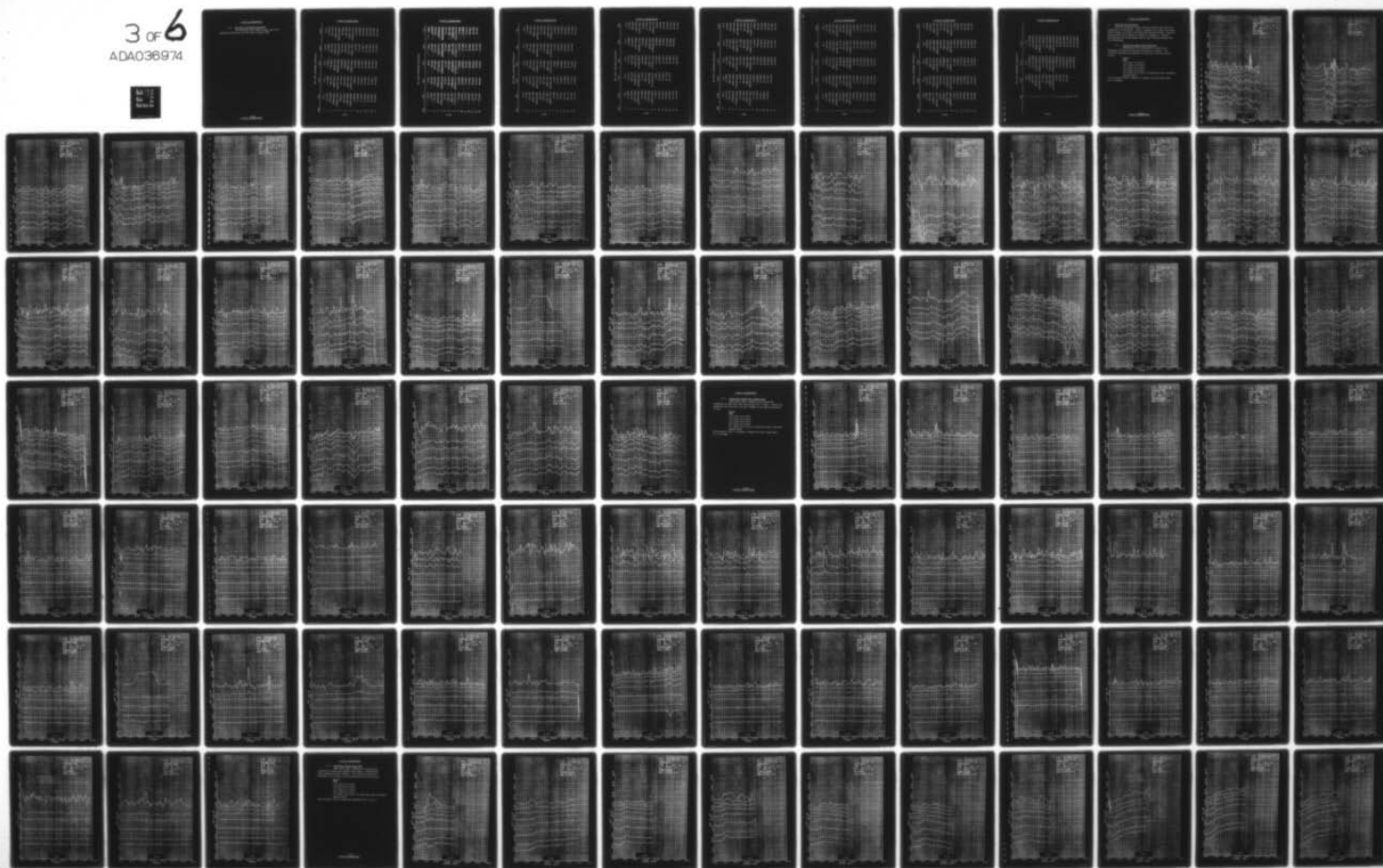
F/G 17/9

N00017-73-C-2244

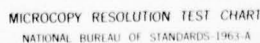
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1.2.2 Raw Total Histogram Statistics

The following eight pages contain Raw Total Histogram Statistics for Runs 401T through 1708T.

UNCLASSIFIED

RAW TOTAL HISTOGRAM STATISTICS

RUN	401T	403T	602T	603T	604T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	12.13776	11.74962	11.96742	10.92550	12.51214
2	594.69248	505.97314	553.98547	333.67880	674.09733
3	35102.48730	29528.75610	32892.16303	14788.81727	40645.15176
4	3101296.17195	2764707.72030	2924383.44354	971090.92925	3483979.83973
5	29.66610	28.12913	26.33468	26.54176	26.43452
6	327.05110	282.13934	306.53721	180.53440	356.09665
7	14672.51983	13516.63593	14533.74097	6191.20953	15924.22187
8	1544314.85458	1526798.50192	1493548.83984	475282.06982	1567556.37194
9	10.00000	9.54242	10.00000	9.03089	10.41392
10	15.79783	15.31478	15.56302	14.47158	16.12783
11	19.24279	18.92094	19.13813	17.99340	19.44482
12	21.30333	21.23851	21.39879	20.12837	21.46128
13	22.87801	23.15970	23.09630	21.76091	23.01029
14	24.29752	24.98310	24.51786	23.11753	24.24881
15	26.83947	26.86636	25.64666	24.78566	25.23746

UNCLASSIFIED

RAW TOTAL HISTOGRAM STATISTICS

RUN	605T	606T	608T	609T	701T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	11.4305	12.4739	15.4447	13.7029	12.3919
2	431.9523	693.8872	2950.9509	1319.1574	853.3006
3	22469.2065	45439.0138	431152.7936	130807.9774	99875.2946
4	1731001.2556	4426825.0313	94507314.8176	19975501.8982	25441463.9596
5	25.8883	28.4073	30.1029	29.6094	30.1029
6	238.7047	381.4273	1723.6384	758.8580	592.4272
7	9827.8499	19688.8613	207003.5509	63790.1185	65609.7163
8	870400.2005	2221985.8144	51300522.7132	11148387.1467	19801488.2678
9	9.0308	10.4139	13.2221	11.4612	9.5424
10	15.0514	16.1278	19.1907	17.4036	16.0203
11	18.5733	19.6378	22.9446	21.1727	20.3742
12	20.8278	21.8184	25.2374	23.5602	23.5218
13	22.4797	23.4635	26.9019	25.3275	26.1909
14	23.8381	24.8713	28.2282	26.7302	28.4633
15	24.8144	25.6638	29.4151	27.9169	

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RAW TOTAL HISTOGRAM STATISTICS

RUN	702T	703T	704T	706T	707T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	11.4210	10.6767	11.9913	11.7620	13.02690
2	447.4929	393.4431	627.4981	642.6916	948.99641
3	26014.1556	34277.8148	50301.9140	77507.8846	78851.00287
4	2563109.4850	7228106.0401	7704309.0375	28867794.8294	10497450.34919
5	28.4509	29.7127	30.1029	30.1029	29.42504
6	255.0885	257.0753	377.3098	417.5722	545.91012
7	12730.3215	23669.1318	28440.4821	55334.4628	37877.50814
8	1525280.2735	5892394.6992	5275912.4859	24932146.2742	5972810.15318
9	9.0308	7.7815	9.5424	9.0308	10.79181
10	15.0514	14.1497	15.5630	15.4406	16.72097
11	18.7506	18.6332	19.5904	19.6378	20.37426
12	21.1727	21.9865	22.3804	22.4951	22.76461
13	23.1006	24.8429	24.7421	25.9769	24.66867
14	25.0920	27.3078	26.6651	29.7220	26.49484
15	26.9196	29.2788	28.5003		27.84617

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RAW TOTAL HISTOGRAM STATISTICS

RUN	708T	709T	801T	802T	803T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.63851	10.08808	12.47319	12.00560	11.3061
2	410.58409	336.48529	668.39985	570.65339	383.8396
3	42279.45984	103688.97649	40465.52134	44087.48389	17302.4223
4	11586399.63605	95364626.52976	3474625.88576	12653001.37654	1107961.2221
5	30.10299	30.10299	26.88419	30.10299	26.2324
6	276.39920	232.44144	356.05160	318.81513	201.3545
7	31119.80986	95514.86989	16067.37047	24912.73157	6677.1672
8	9903917.29676	91311618.10541	1573933.11368	10526438.09239	493395.6715
9	7.78151	7.78151	10.41392	10.00000	9.5424
10	14.14973	13.61727	16.12783	15.68201	14.9136
11	18.49231	17.48188	19.44482	19.08485	18.1954
12	22.30448	20.17033	21.49219	21.36720	20.2118
13	25.35294	24.01400	22.98853	23.65487	21.7609
14	27.67155		24.16640	28.39478	22.9666
15	30.09025		25.30199		24.0654

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RAW TOTAL HISTOGRAM STATISTICS

RUN	1104T	1105T	1107T	1108T	1109T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	12.47112	11.89755	13.40972	12.71206	12.0210
2	756.14197	535.33783	1093.81184	804.10704	635.4669
3	77793.97315	34667.39932	92373.36647	60537.93399	44315.2696
4	29747884.03129	6134036.27664	11597138.18991	7255075.19318	4641635.8296
5	30.10299	30.10299	28.10904	30.10299	27.7815
6	444.09126	295.72462	613.03343	455.43830	381.8359
7	48747.05155	17225.36077	41506.17508	28514.60408	22032.8673
8	25374576.16669	4584908.53146	5957223.72322	4050947.13591	2592670.6744
9	10.41392	10.00000	11.13943	10.41392	9.5424
10	16.12783	15.56302	17.07570	16.33468	15.7978
11	19.86771	19.03089	20.68185	20.00000	19.6378
12	22.32996	21.23851	22.92256	22.38044	21.9865
13	24.39332	23.15970	24.56366	24.23245	23.6735
14		26.27365	25.88831	25.77491	24.9554
15			26.88410	27.16837	26.0745

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RAW TOTAL HISTOGRAM STATISTICS

RUN	1204T	1601T	1602T	1603T	1604T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	11.69931	12.82172	11.55084	12.51132	12.0796
2	466.17525	782.54556	440.77384	683.60367	565.4328
3	23548.02604	51165.82666	22207.94449	42282.78708	31997.2439
4	1686825.97056	4752760.58862	1640395.31447	3744621.32218	2615992.6220
5	26.14477	26.68385	25.99883	26.71172	28.2151
6	247.46818	415.81639	236.52105	365.72190	304.8637
7	9334.38824	20254.03022	9147.95685	17053.56698	13027.6269
8	772079.27443	2151845.47982	785855.99629	1729826.03700	1230292.2516
9	8.54242	10.79181	9.54242	10.41392	10.0000
10	15.31478	16.43452	15.18513	16.12783	15.4820
11	18.63322	19.77723	18.57332	19.49390	19.0848
12	20.71882	21.81843	20.48185	21.58362	21.1727
13	22.25309	23.34453	22.32994	23.13867	22.7184
14	23.46352	24.54844	23.76576	24.40909	23.9794
15	24.57881	25.64666	24.98310	25.32754	25.4654

RAW TOTAL HISTOGRAM STATISTICS

RUN	1605T	1606T	1607T	1609T	1704T
J	AA(J)	AA(J)	AA(J)	AA(J)	AA(J)
1	10.7999	12.72941	13.87037	13.42874	12.0245
2	669.1695	769.18195	1348.30132	1137.35544	618.5571
3	251424.7114	51865.93932	125069.23180	101516.72288	53905.1795
4	155132170.4109	5118063.70042	17071529.51276	13690446.38353	14974131.9760
5	29.9913	28.29946	27.99340	28.87617	30.1029
6	524.6260	417.71643	753.90558	652.34742	364.5080
7	230764.7752	21783.56118	55436.54508	47735.69942	32426.3179
8	143558697.9439	2480116.38283	8623290.19717	7351737.56487	12286611.3637
9	8.4509	10.79181	11.76091	11.13943	10.0000
10	14.3136	16.33468	17.55874	17.16003	15.4820
11	17.8532	19.82271	21.10589	20.82785	19.4448
12	22.2788	21.95899	23.32438	23.13867	22.1484
13	28.3695	23.56025	24.94154	24.80006	24.5484
14	28.5308	24.91361	26.22214	26.22214	27.8247
15	28.6687	26.00972	27.35598	27.31588	

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RAW TOTAL HISTOGRAM STATISTICS

RUN	1706T	1707T	1708T
J	AA(J)	AA(J)	AA(J)
1	12.3866	12.62462524	12.17442584
2	1960.8721	776.11312365	615.94825499
3	1289152.4494	60805.87903090	39497.41810693
4	1214848772.8039	9993552.86956400	3958327.05597048
5	30.1029	30.10299957	28.31869774
6	1660.7329	441.20548954	343.75010537
7	1197638.4429	30454.08887424	17992.56652866
8	1128773904.2894	6765513.22953629	2135430.06347796
9	9.5424	10.41392685	10.00000000
10	15.6820	16.23249290	15.79783597
11	20.0432	19.91226076	19.39519253
12	29.7954	22.32996110	21.47317335
13		24.29752280	23.52182518
14		26.24282096	25.05149978
15		I	26.79427897

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1.3 Variation of Statistics

Plots of statistics versus time and versus range gate are presented in this section. Each is labeled as to type, run number, flight number, altitude, wind direction and sea surface. Detailed descriptions will be found in Volume II, Section 9. Summary descriptions are placed before each of the following subsections for convenience.

1.3.1 Statistics versus Time (Absolute)

These plots show a selection of statistical parameters as they vary over the duration of a flight. The following statistical parameters are plotted in dB from bottom to top:

- Median
- Mean
- 10^{-1} point in Q curve
- 10^{-2} point on Q curve
- 10^{-3} point on Q curve
- 10^{-4} point on Q curve
- 10^{-5} point on Q curve (if sufficient data available)
- Maximum Value

The horizontal axis is labeled in frames with each frame equal to 5.4 seconds.

FR STATS

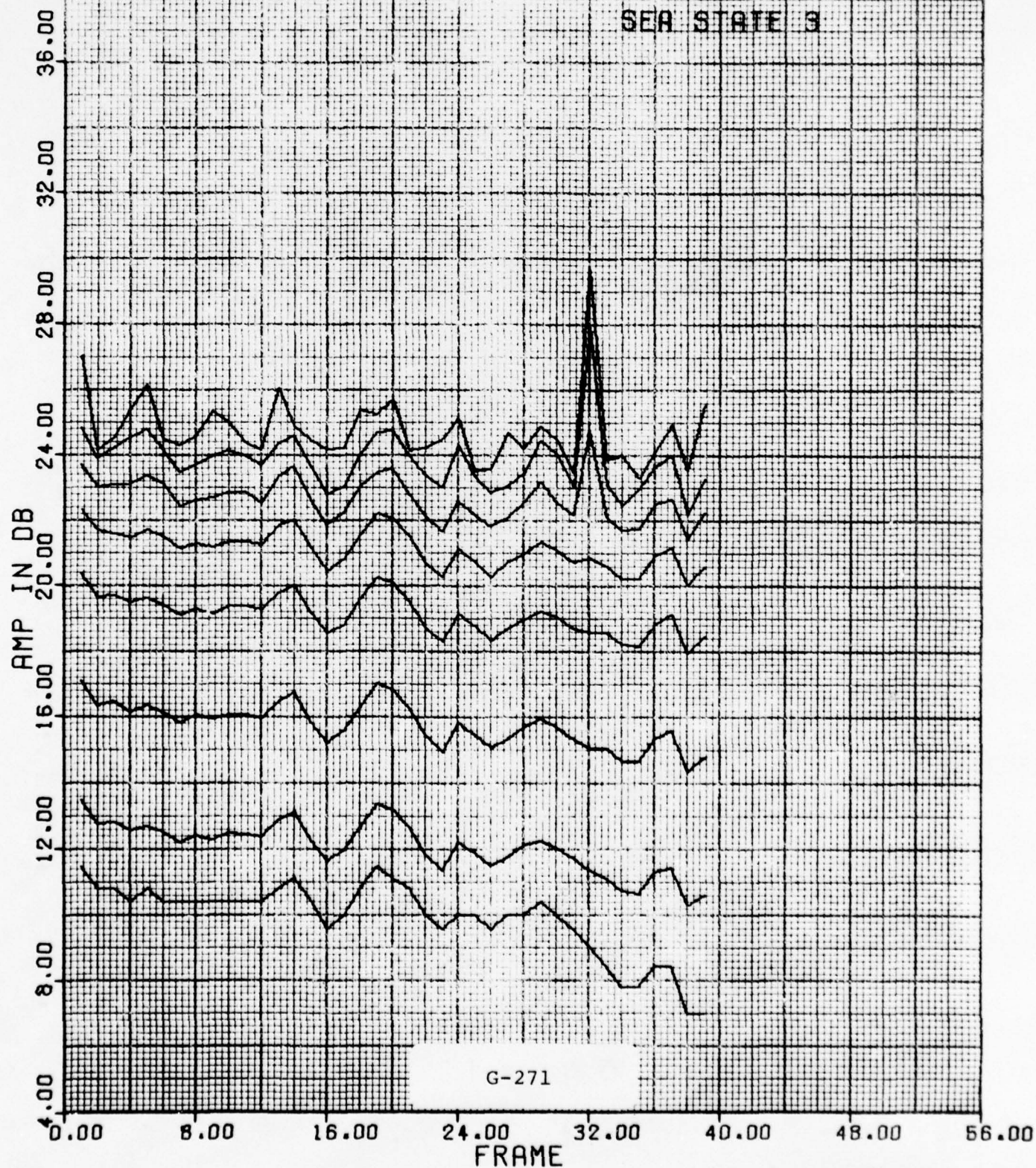
ABSOLUTE

RUN 1 FLT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3



FR STATS

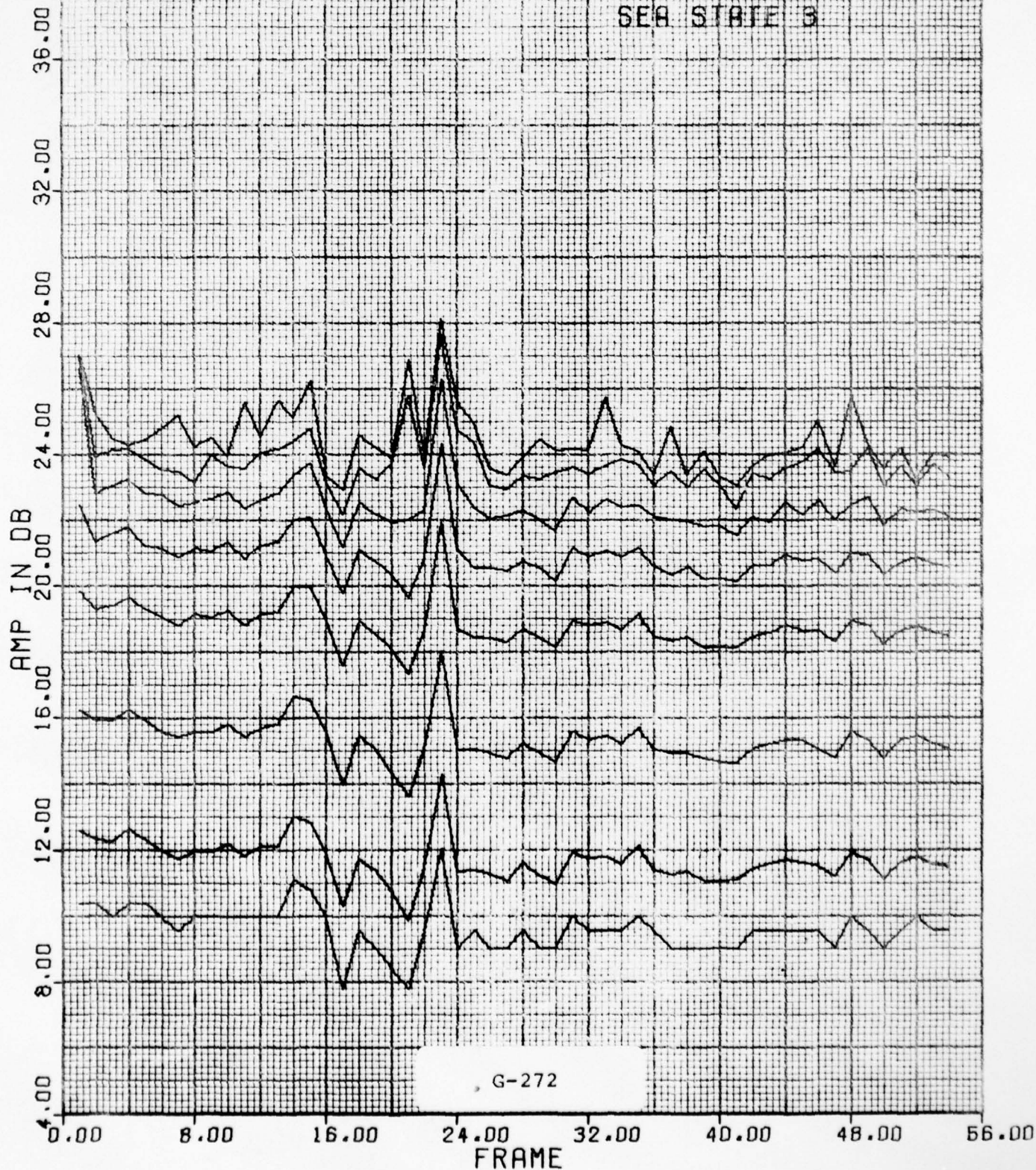
ABSOLUTE

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



FR STATS

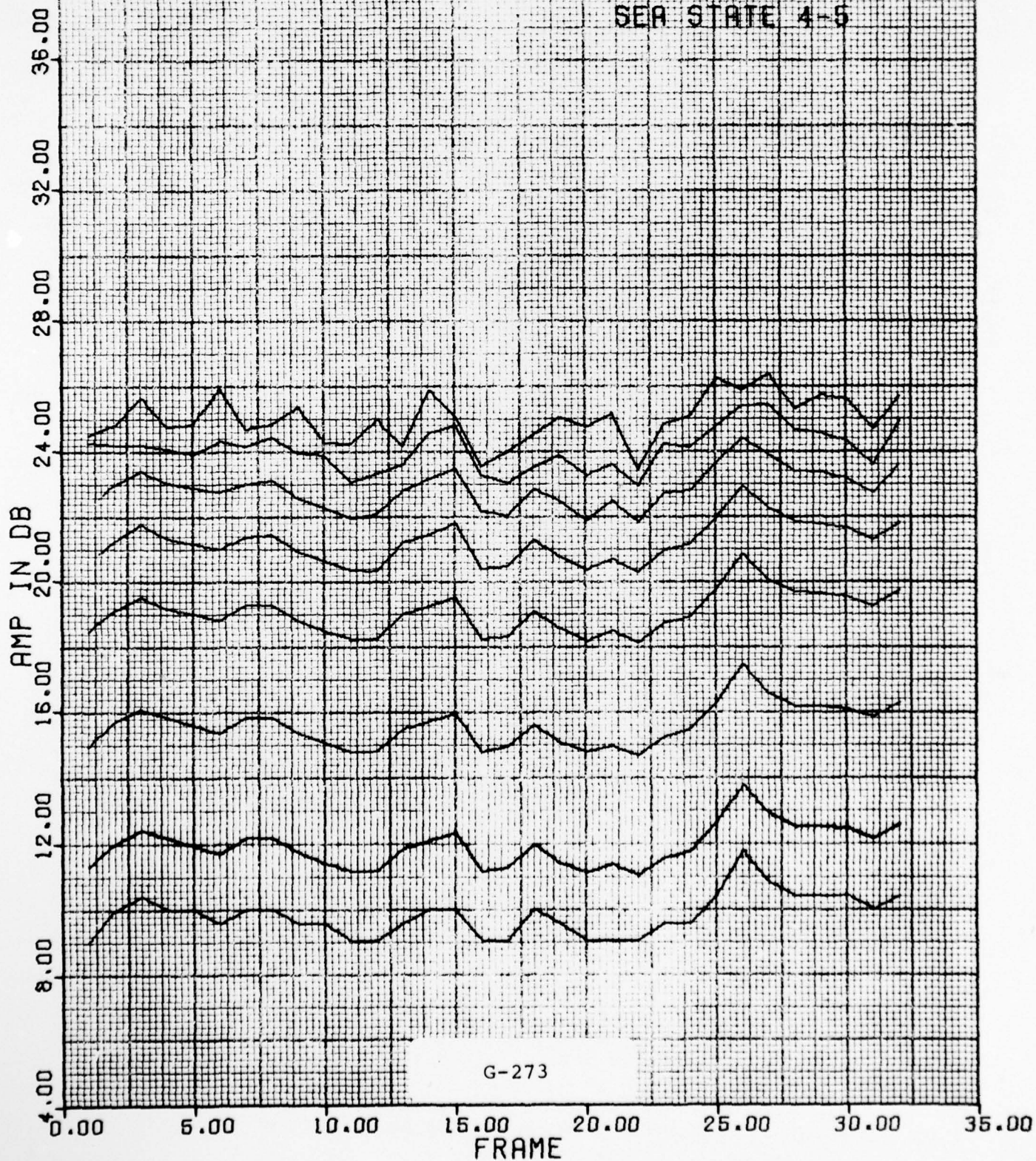
ABSOLUTE

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5



FR STATS

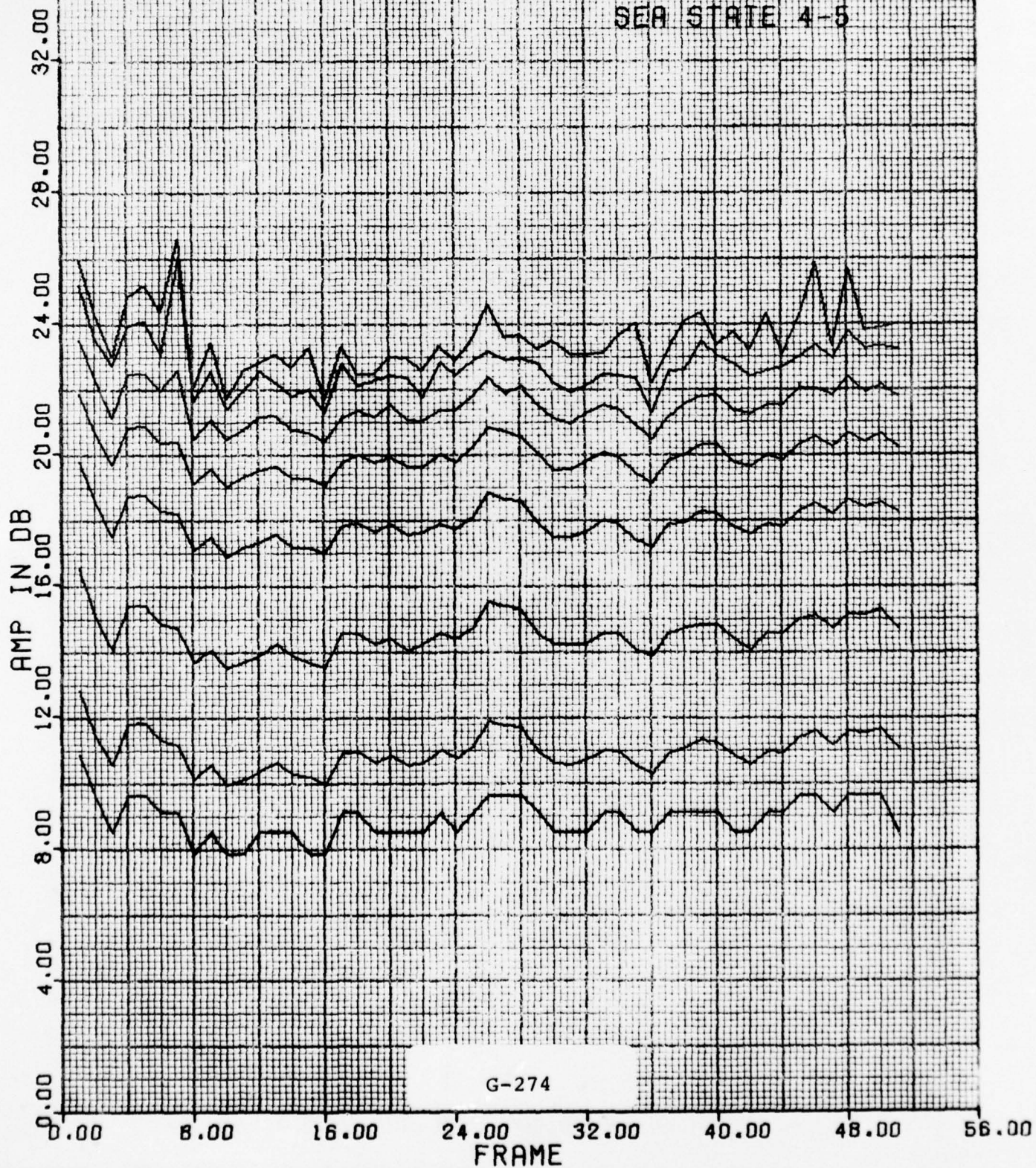
ABSOLUTE

RUN 3 FLT 6

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4-5



ER STATS

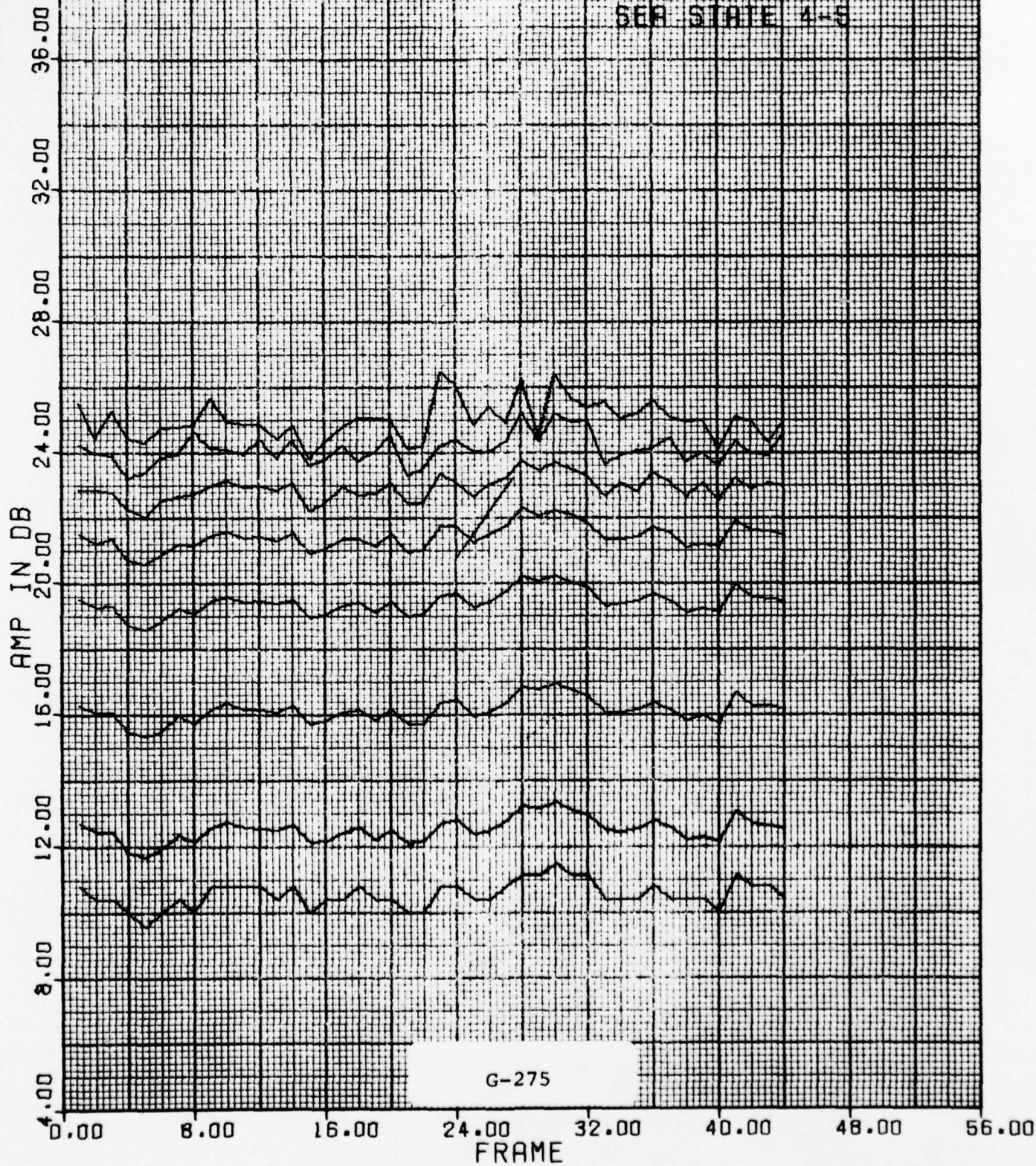
ABSOLUTE

RUN 4 FLT 8

ALT (KFT) 2.8

UP-WIND

SEA STATE 4-5



FR STATS

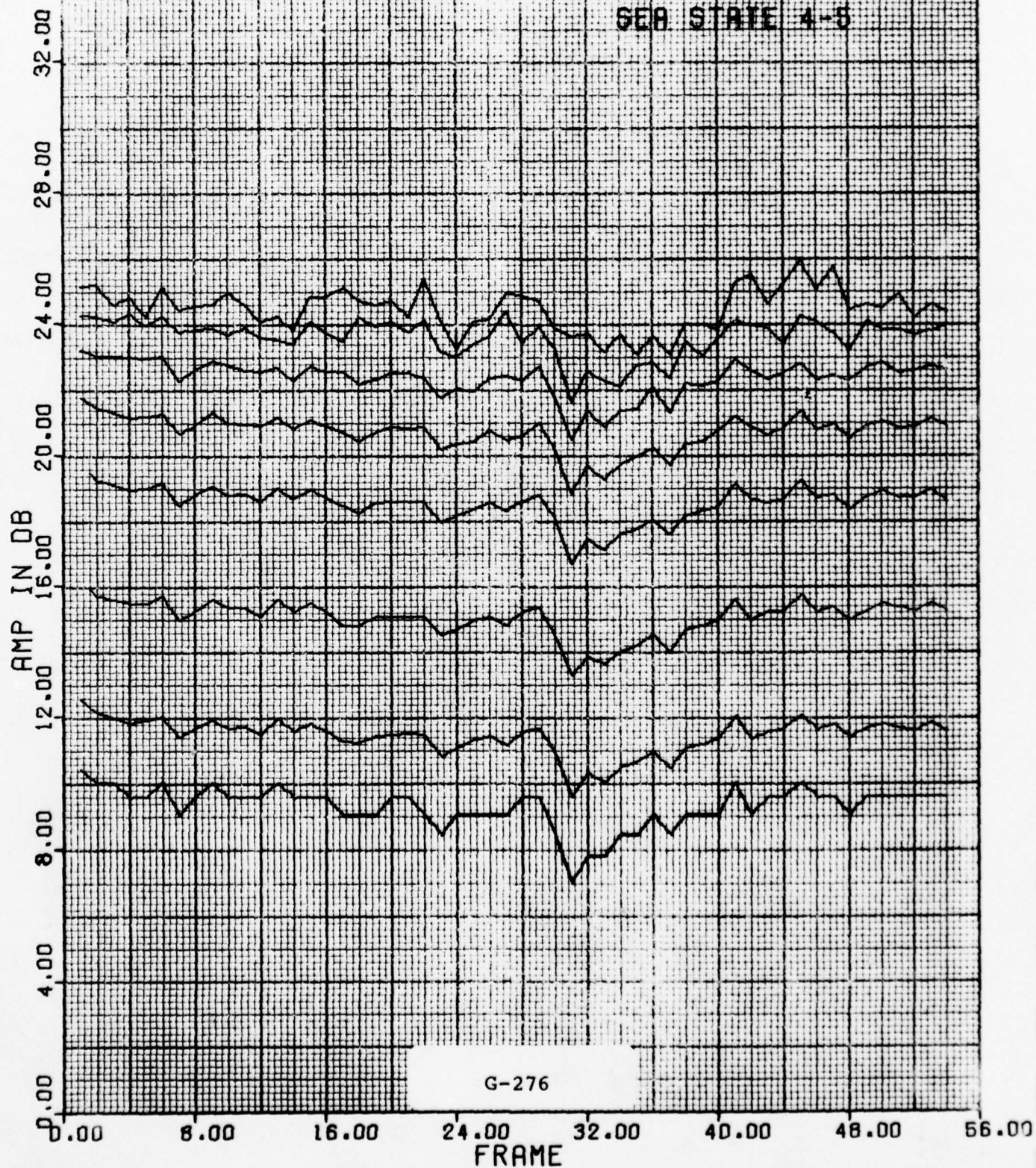
ABSOLUTE

RUN 5 FLI 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



FR STATS

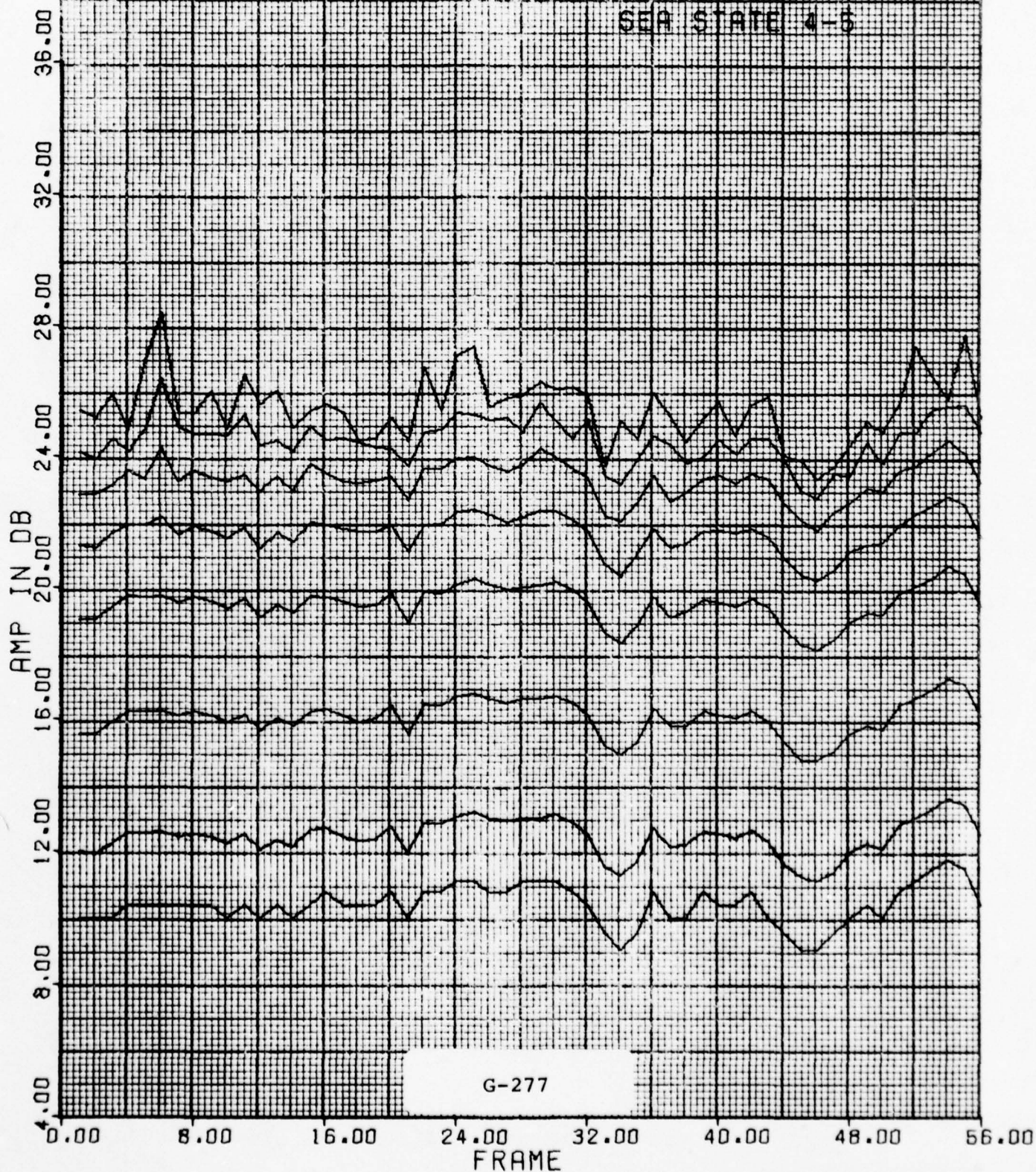
ABSOLUTE

RUN 6 FLT 6

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4-5



FR STATS

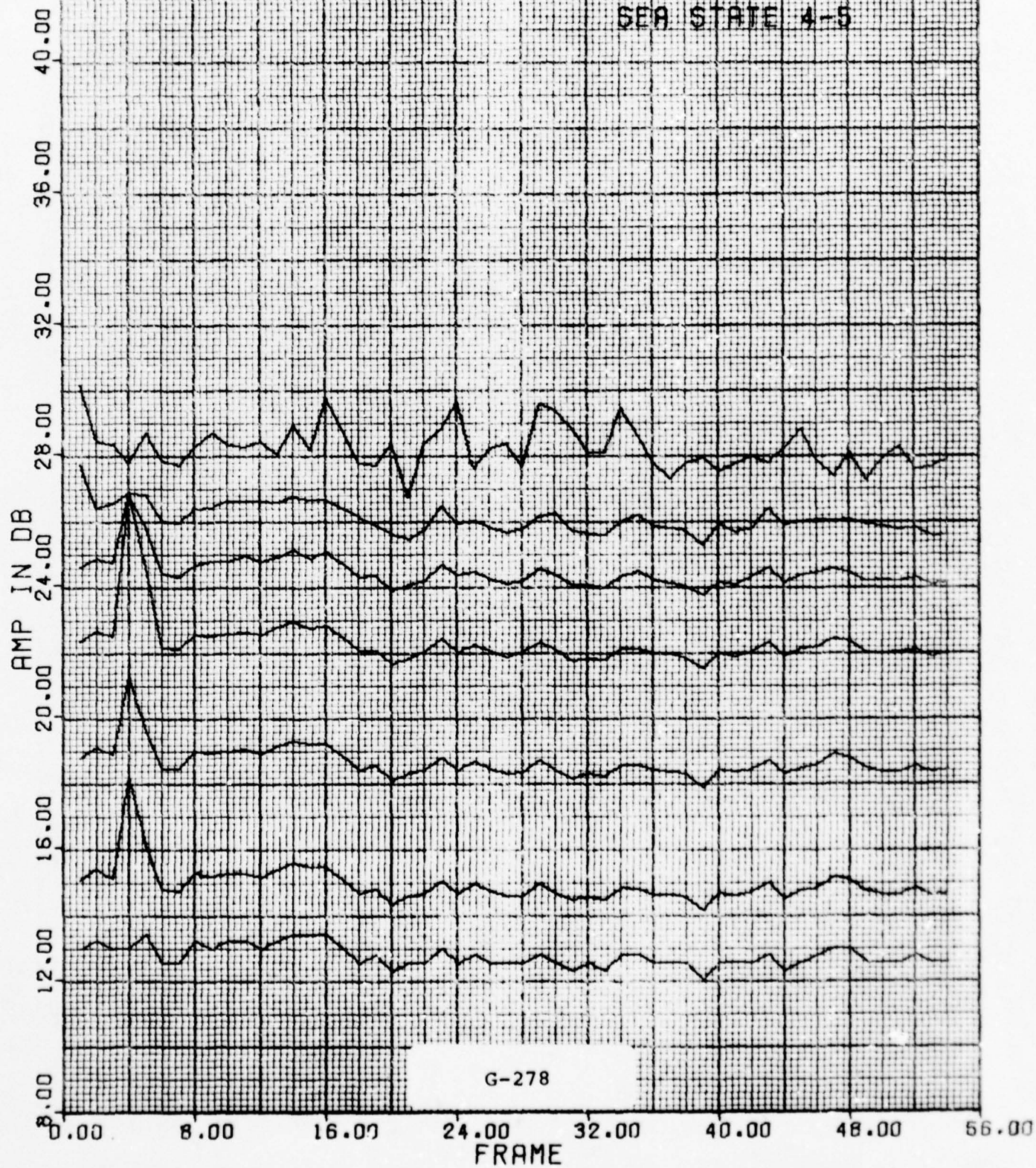
ABSOLUTE

RUN 7 FLT 6

ALT (KFT) 3.3

UP-WIND

SEA STATE 4-5



FR STATS

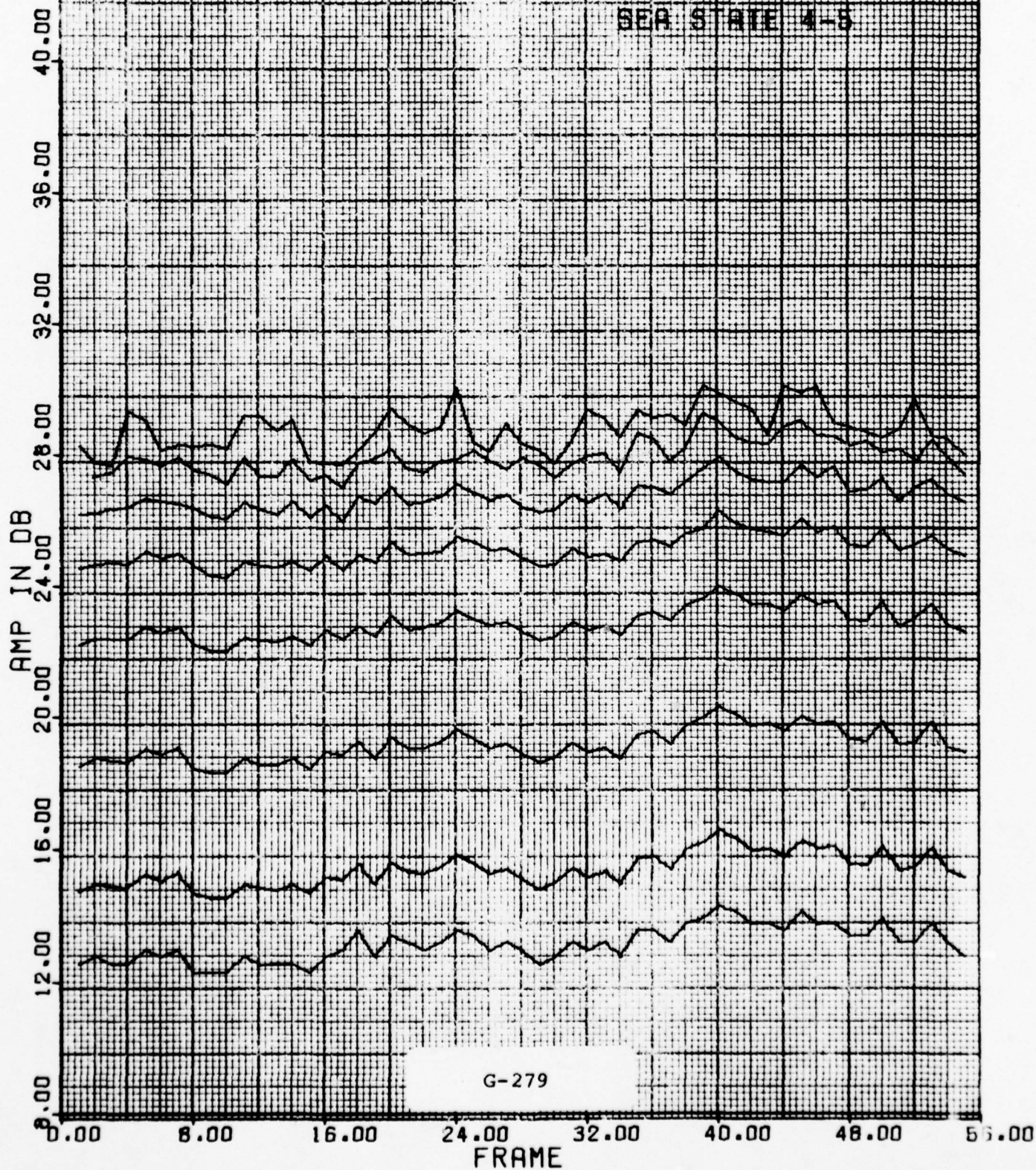
ABSOLUTE

RUN 8 FLT 8

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4-5



FR STATS

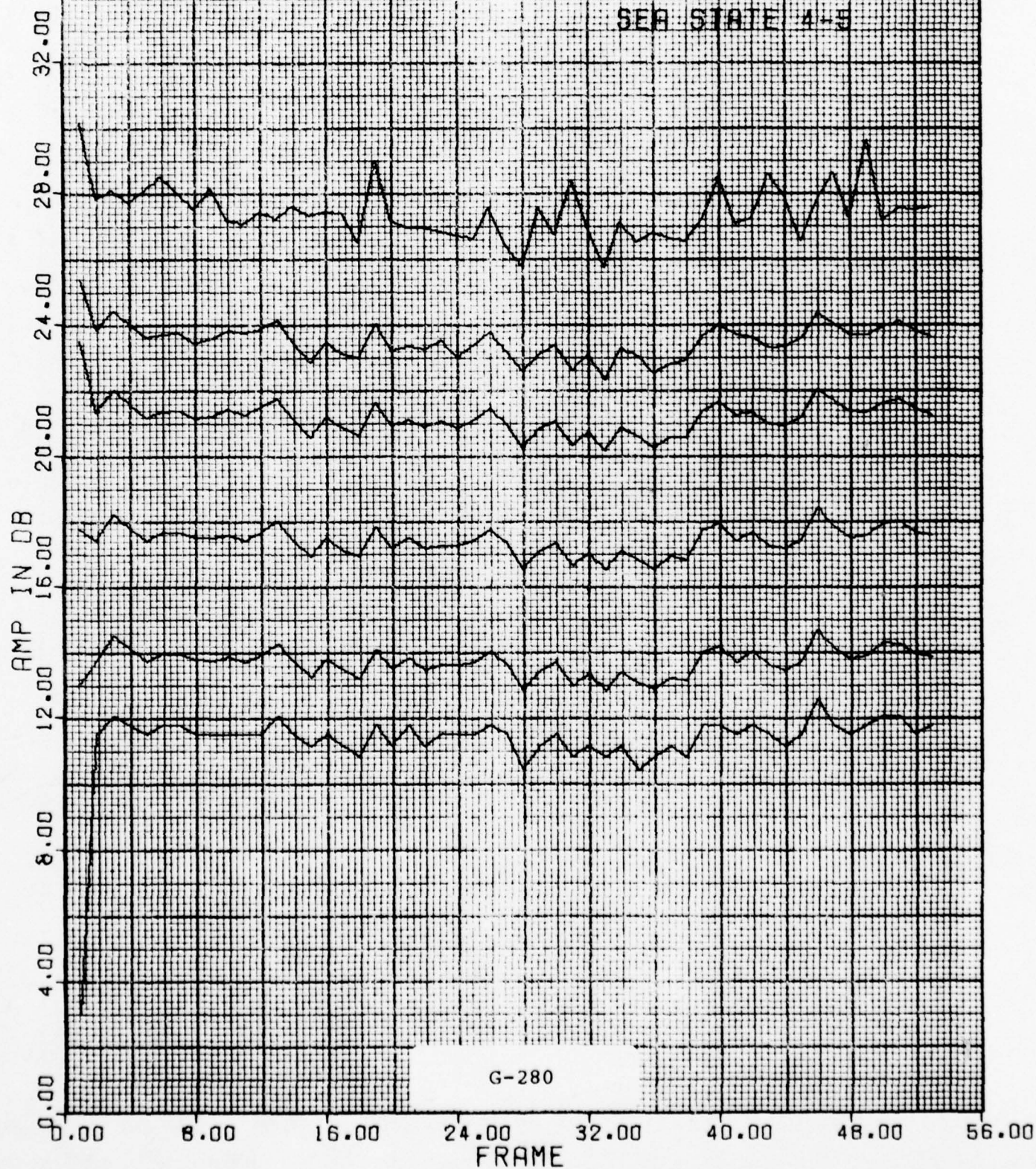
ABSOLUTE

RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5



FR STATS

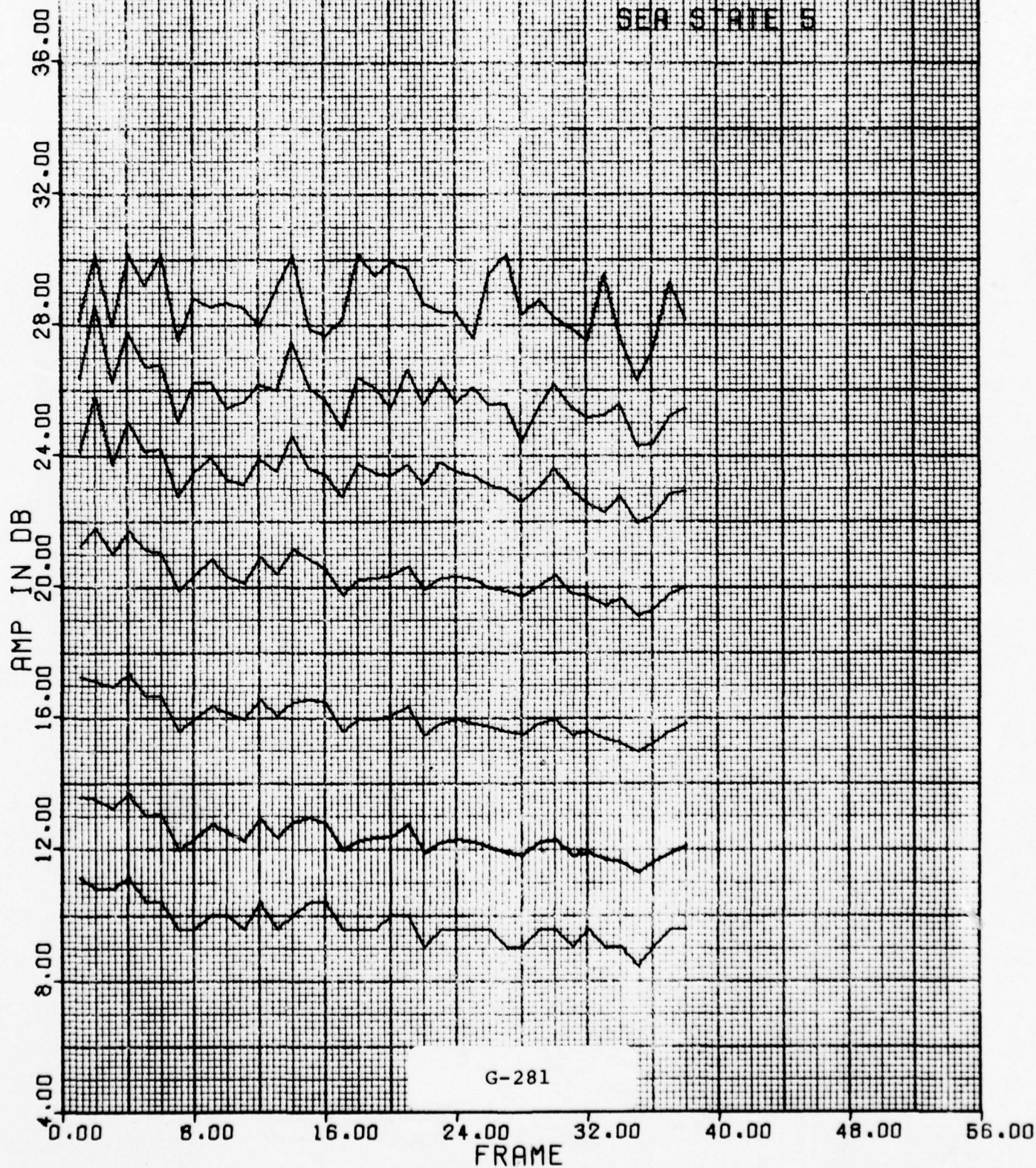
ABSOLUTE

RUN 1 FLT 7

ALT (KFT) 1.1

UP-WIND

SEA STATE 5



FR STATS

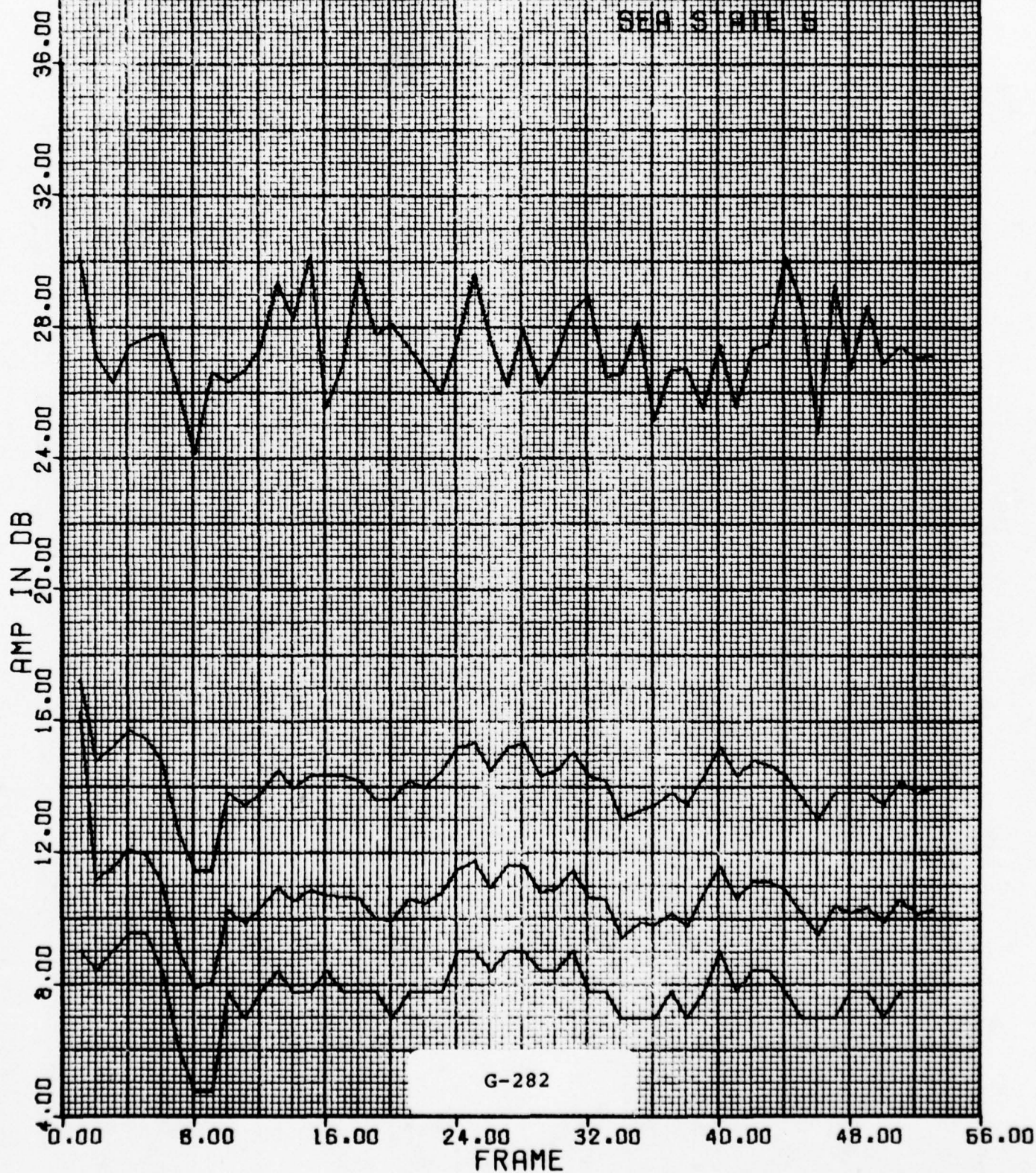
ABSOLUTE

RUN 2 FILE 7

BLT (KFE) 1.3

DOWN-WIND

SEA STATE 5



FR STATS

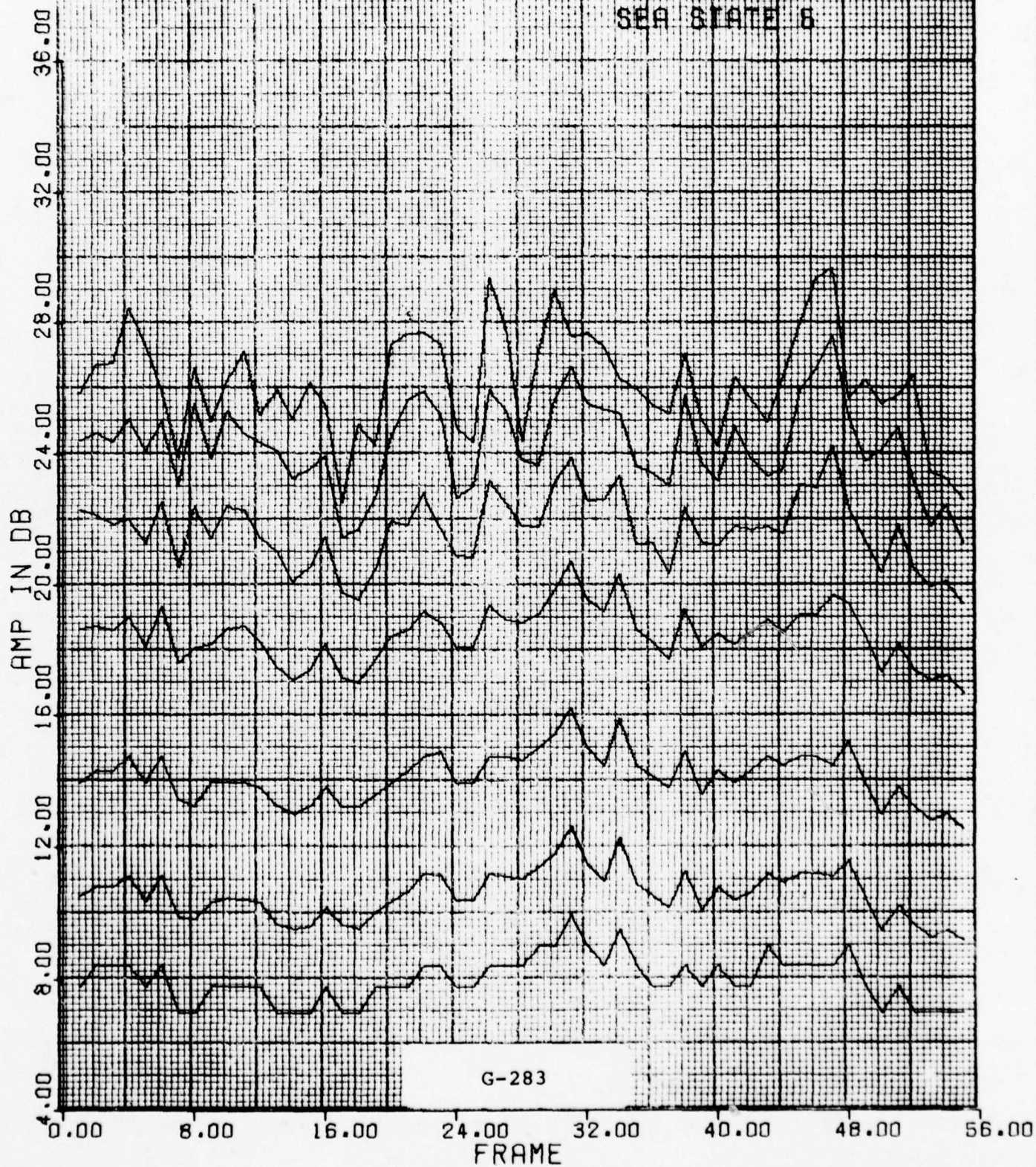
ABSOLUTE

RUN 8 FLT 7

ALT (KFT) 1.1

CROSS WIND

SEA STATE 8



ER STATS

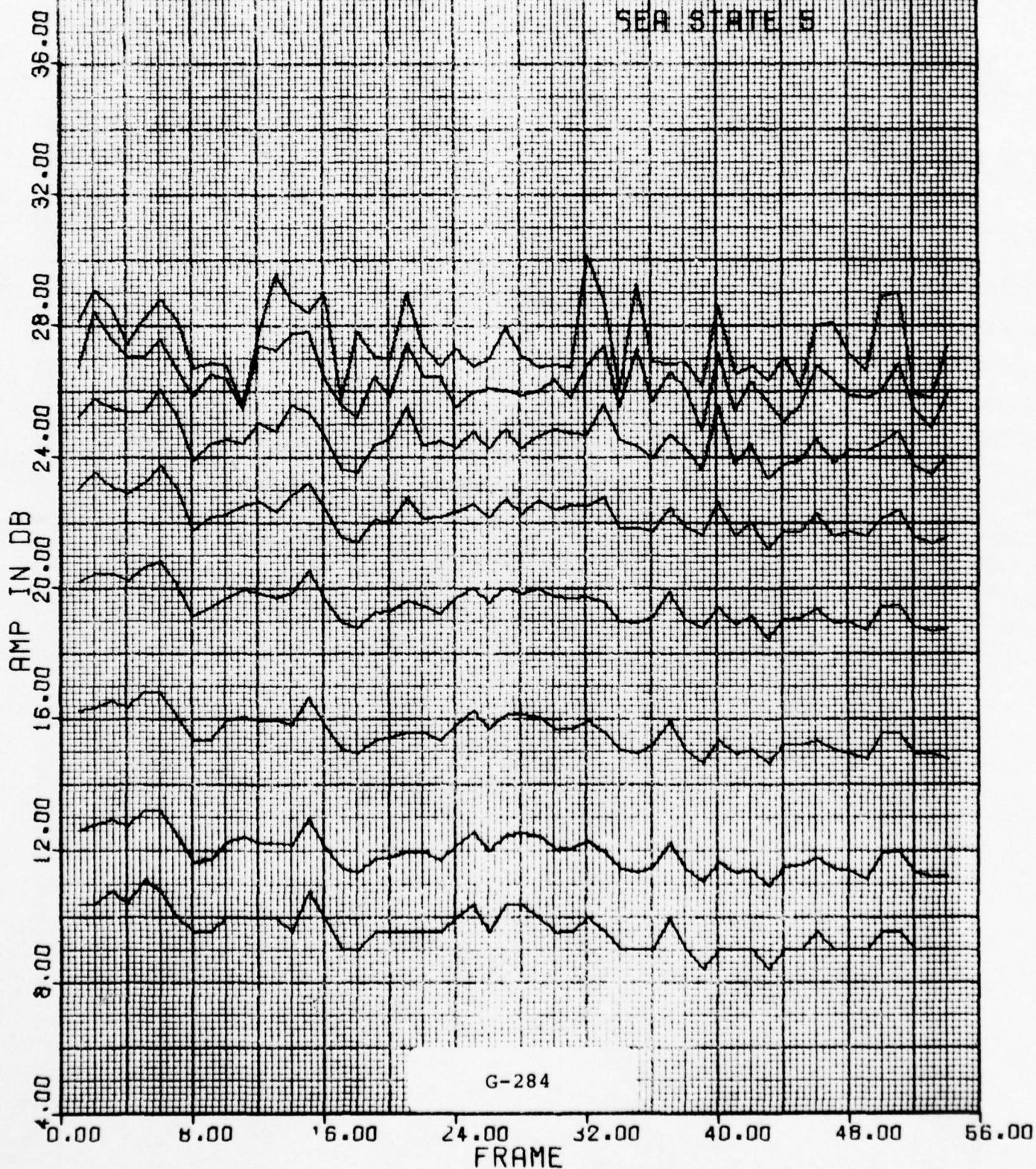
ABSOLUTE

RUN 4 F1T 7

ALT (KFT) 2.2

JP-WING

SEA STATE 5



FR STATS

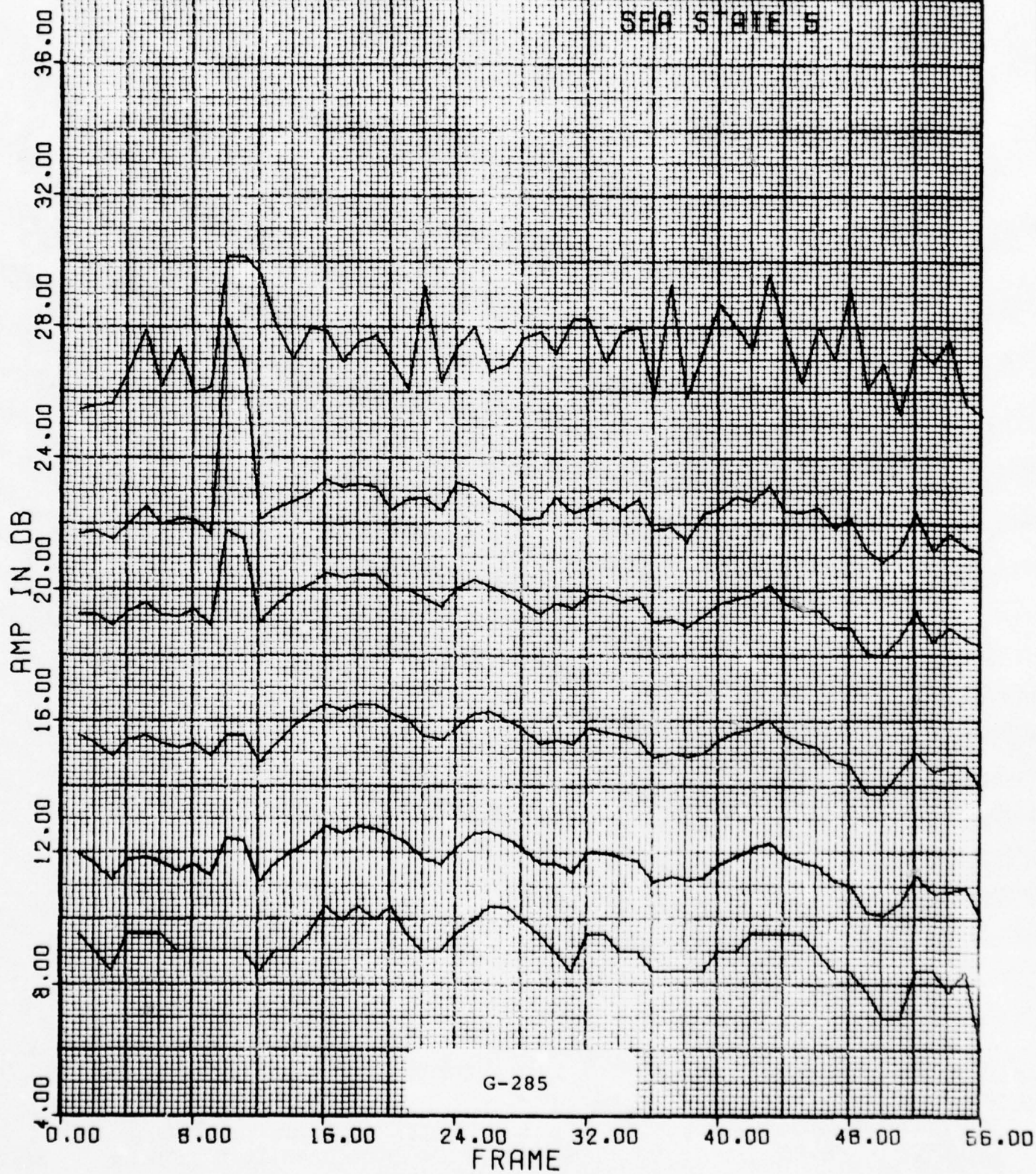
ABSOLUTE

RUN 6 FLI 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5



FR STATS

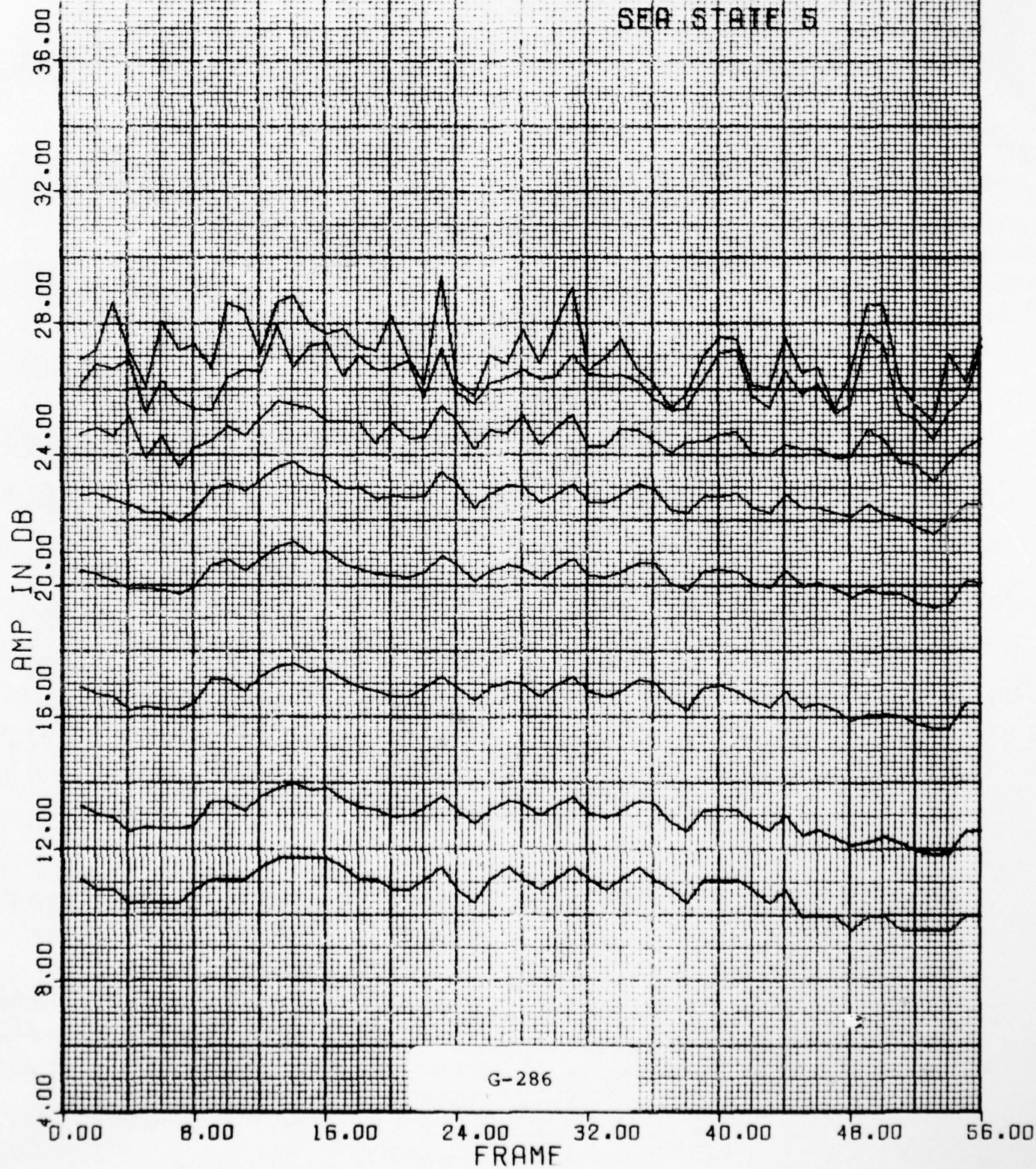
ABSOLUTE

RUN 7 FLI 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



FR STATUS

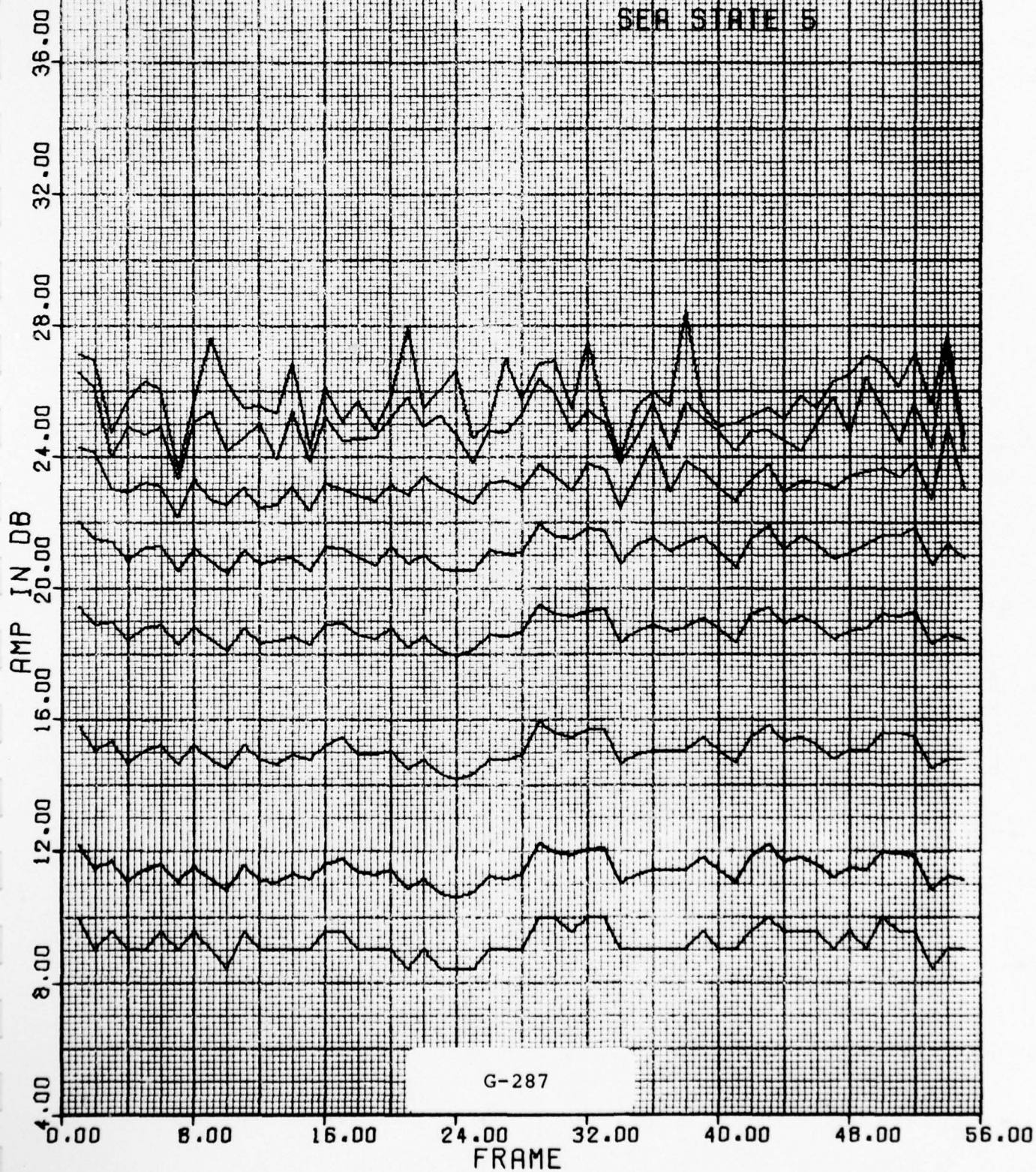
ABSOLUTE

RUN 8 FLI 7

ALT (KFT) 9.3

DOWN-WIND

SEA STATE 5



FR STATS

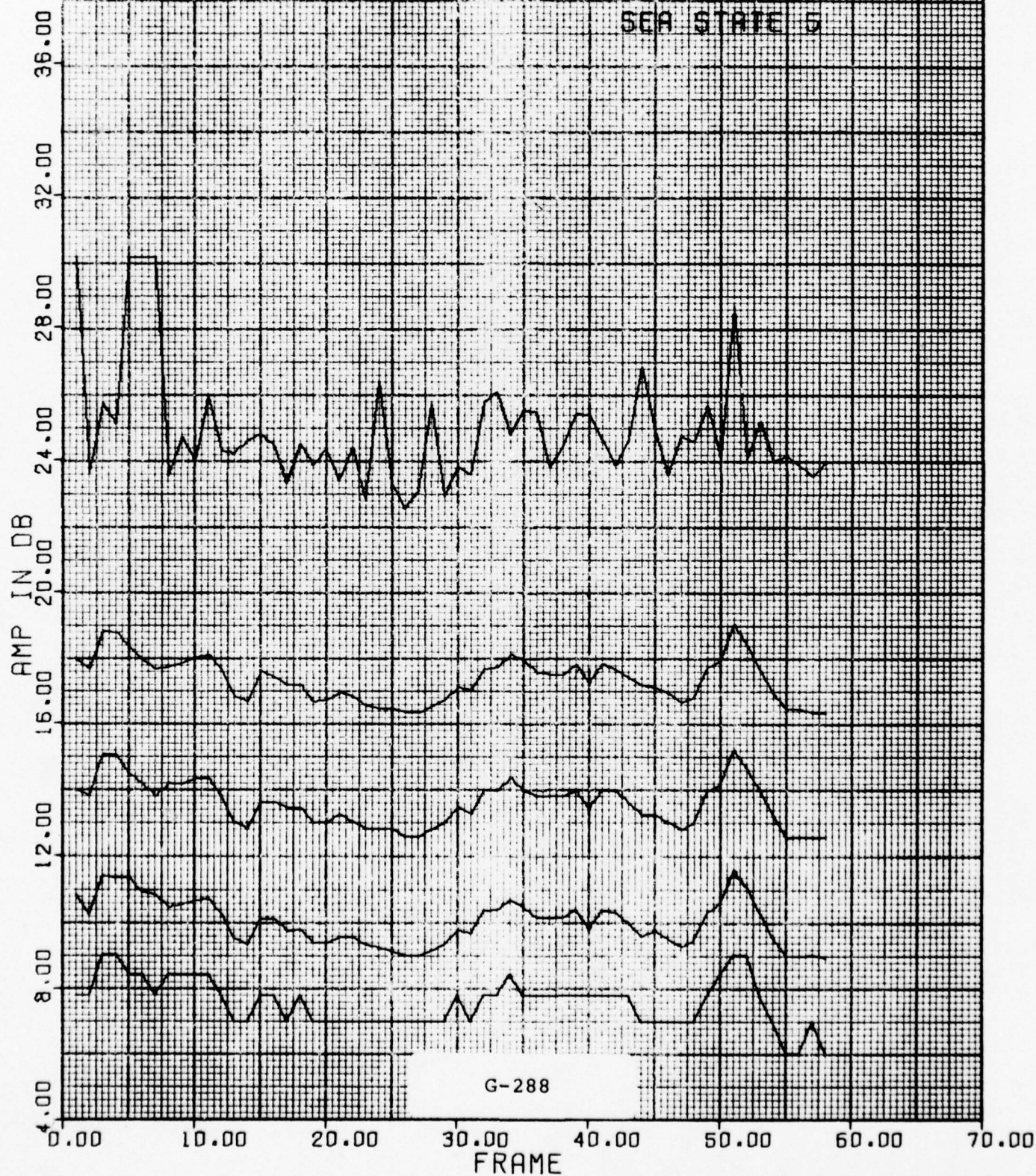
ABSOLUTE

RUN 9 FLT 7

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 5



FR STATS

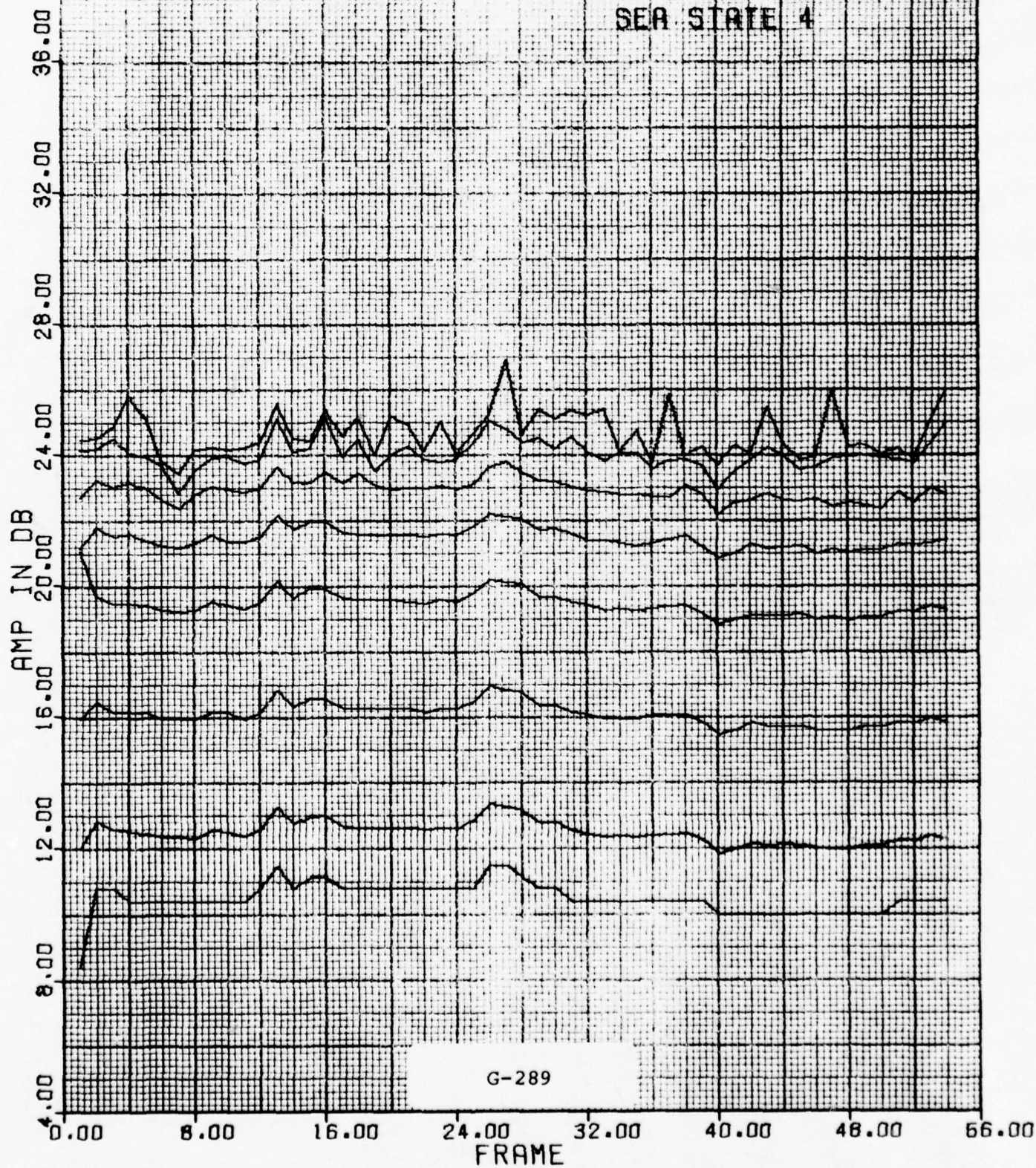
ABSOLUTE

RUN 1 FLT 8

ALT (KFT) 0.5

UP-WIND

SEA STATE 4



FR STATS

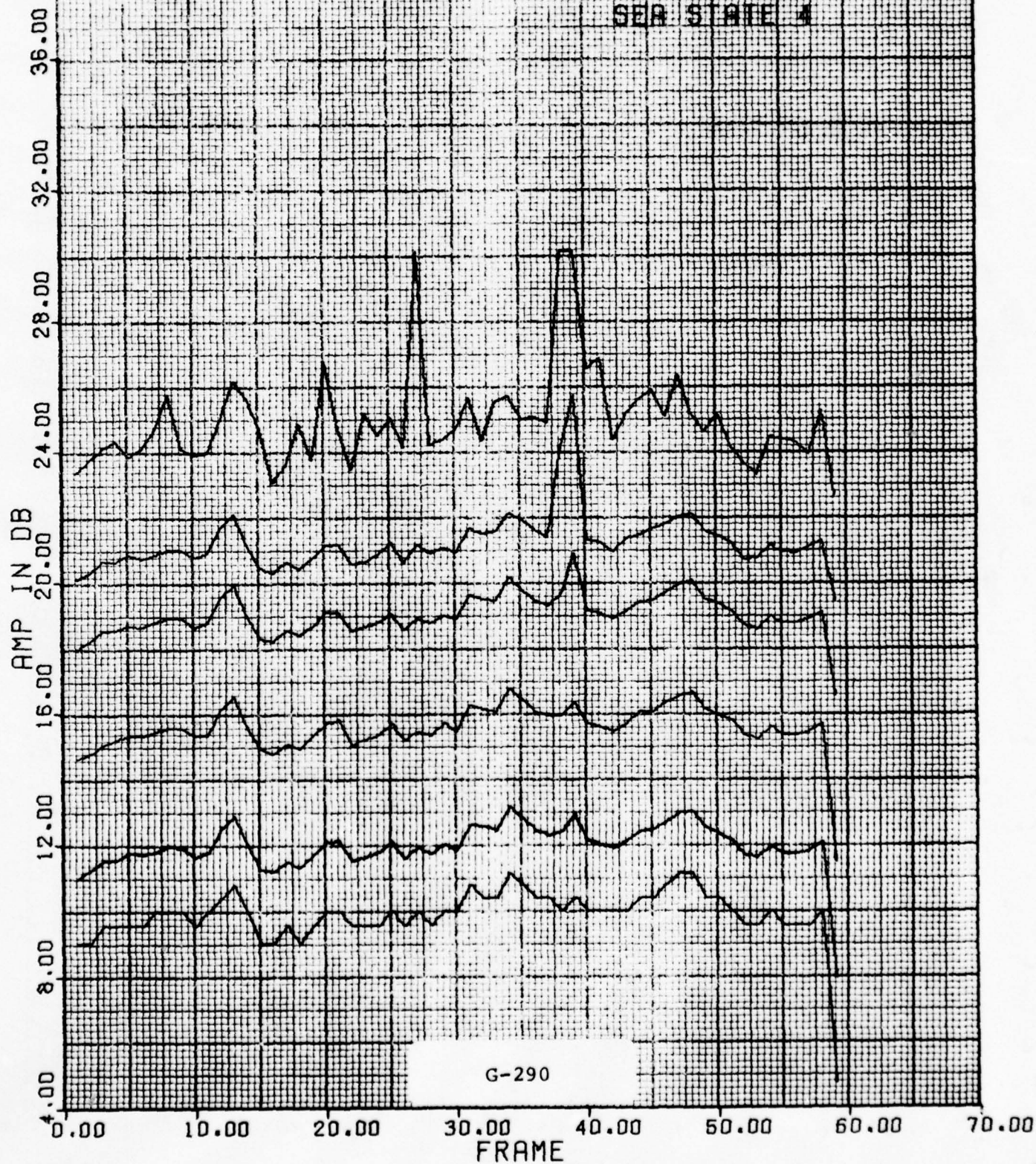
ABSOLUTE

RUN 2 FLT 8

ALT (KFT) 0.5

DOWN-WIND

SEA STATE 4



FR STATS

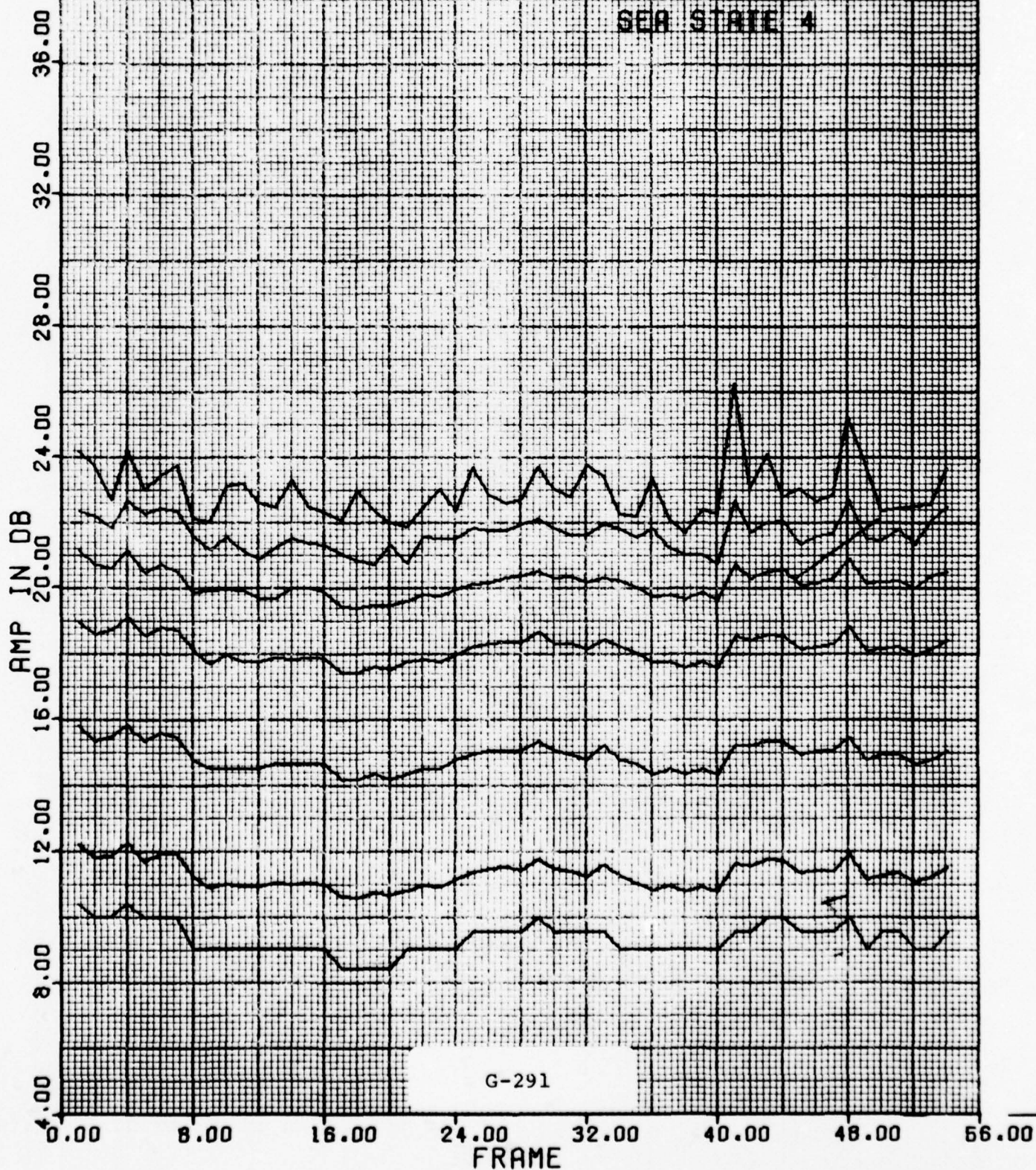
ABSOLUTE

RUN 3 FLT 8

ALT (KFT) 0.8

CROSS-WIND

SEA STATE 4



FR STATS

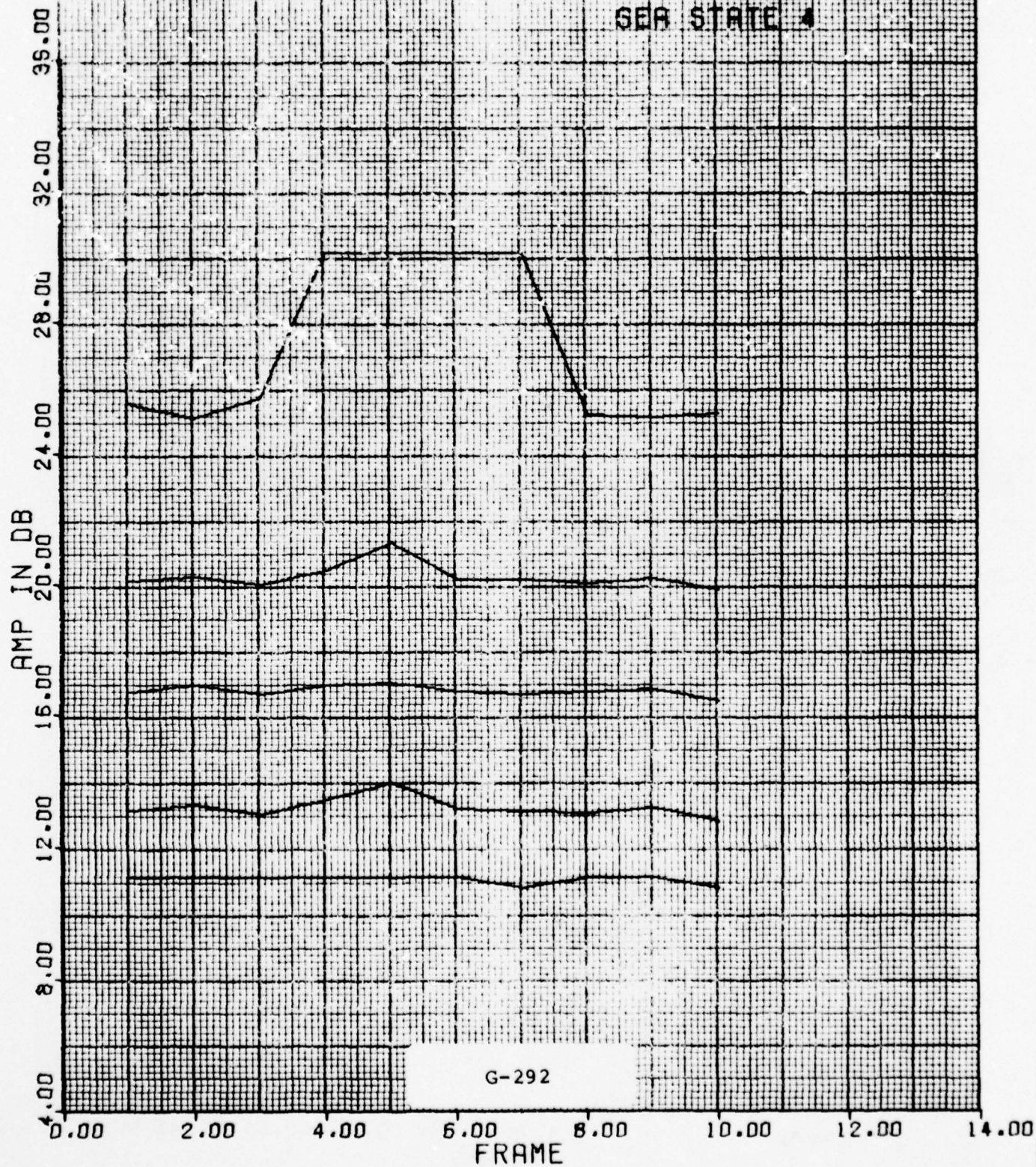
ABSOLUTE

RUN 12 FLT. 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



FR STATS

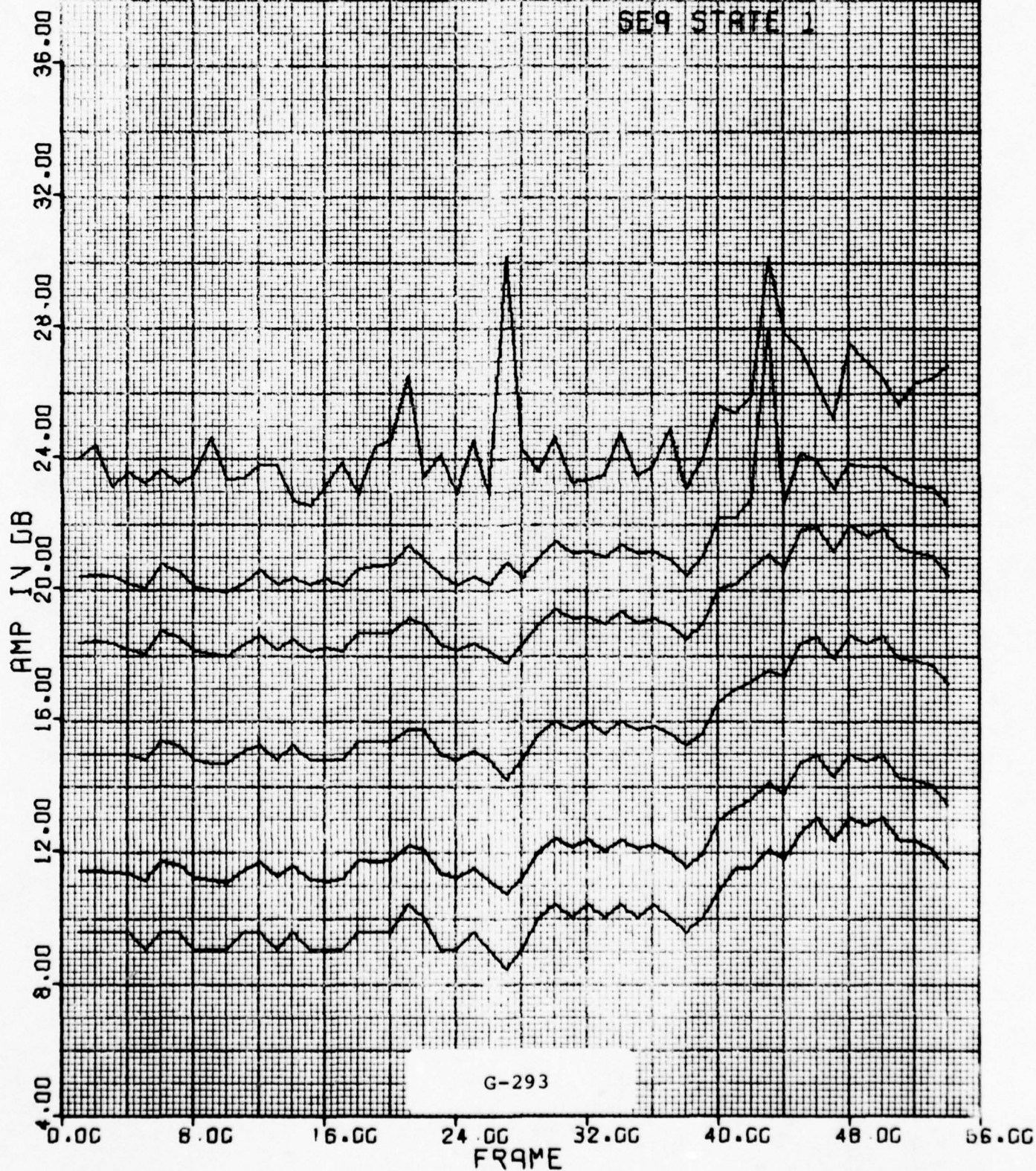
ABSOLUTE

RUN 4 FLT 11

ALT (KFT) 2.2

UP WIND

SEQ STATE 1



ER STATS

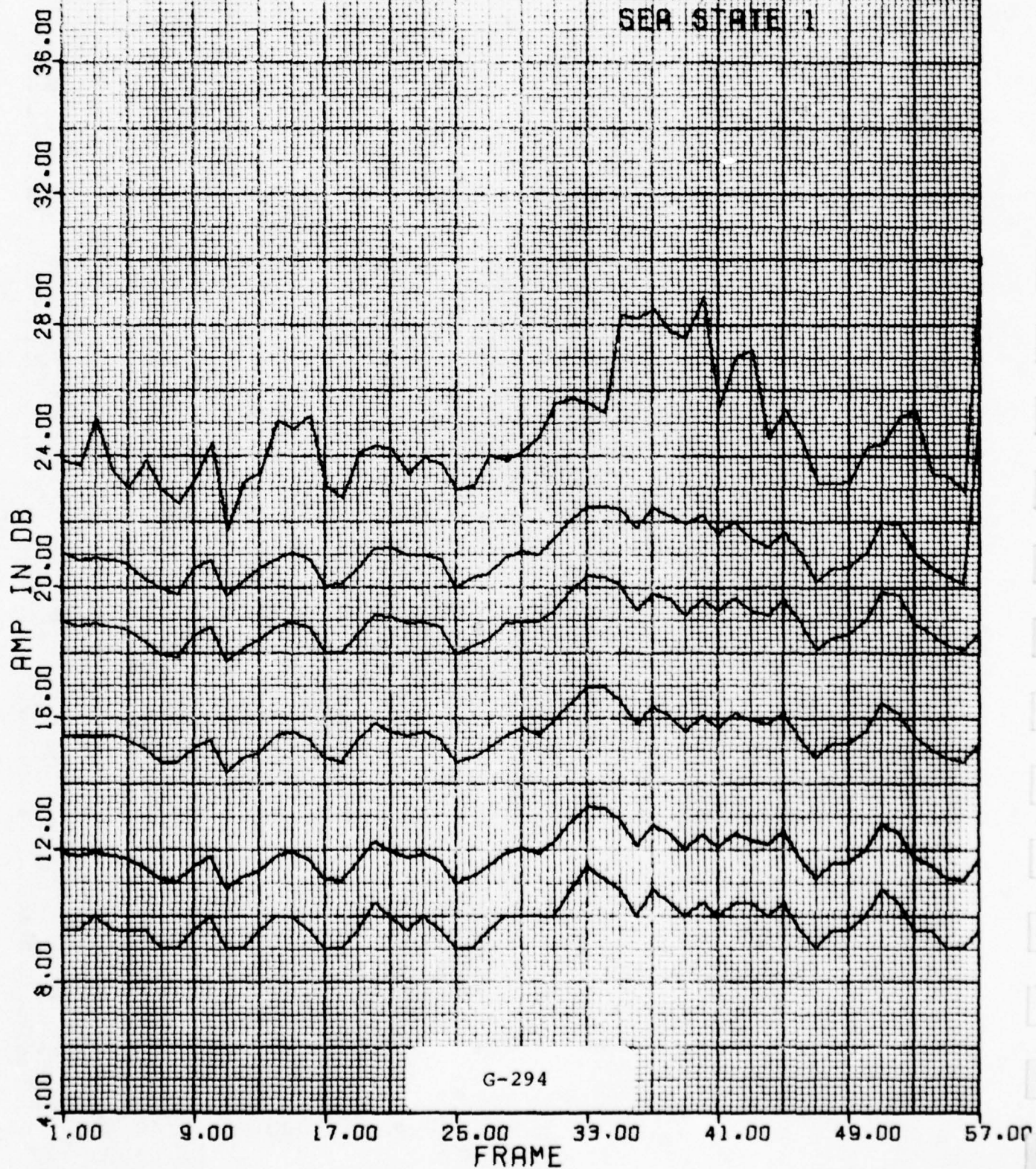
ABSOLUTE

RUN 5 FLT 11

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 1



FR STATS

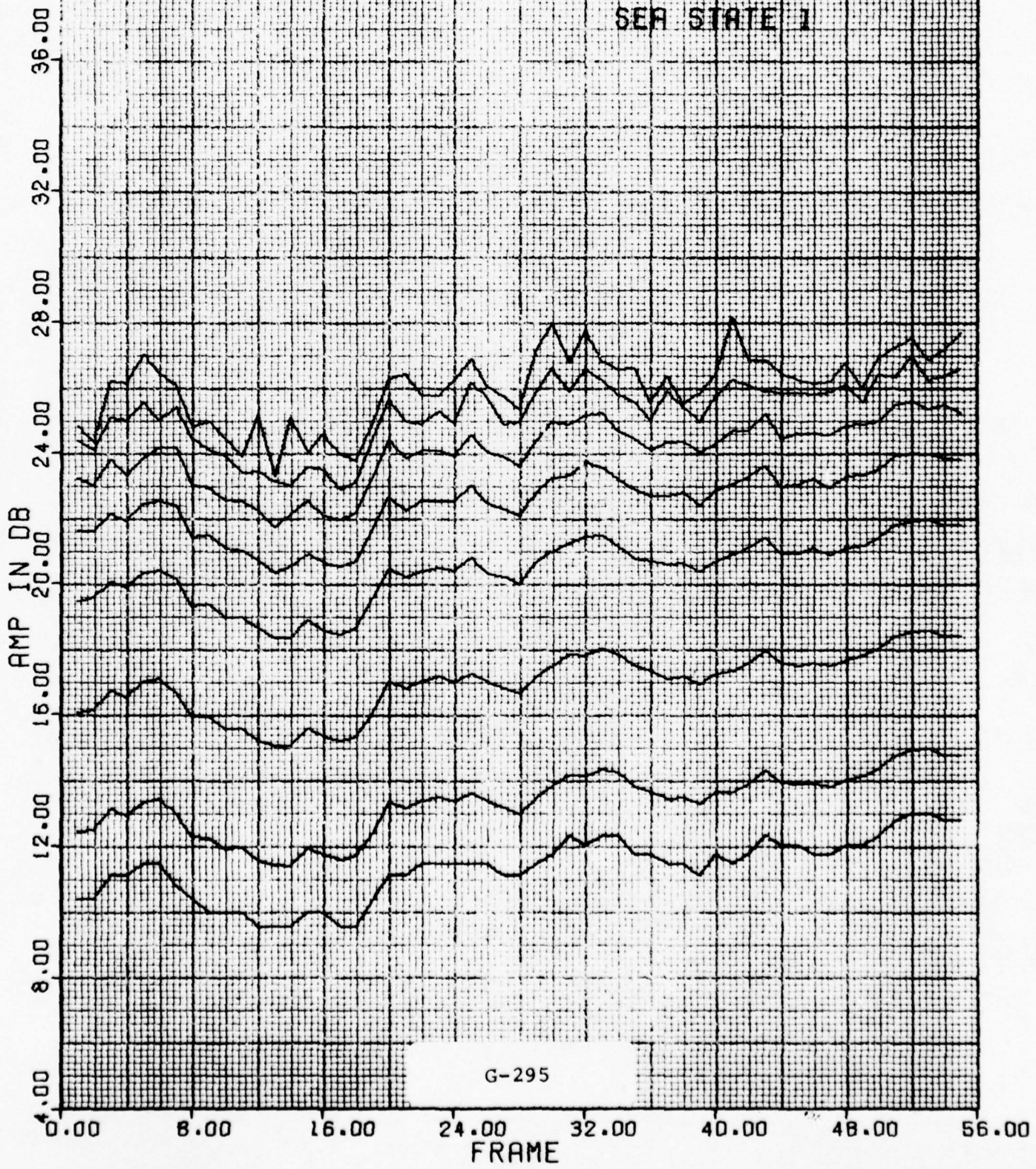
ABSOLUTE

RUN 7 FLT 11

ALT (KFT) 3.3

UP-WIND

SEA STATE 1



FR STATS

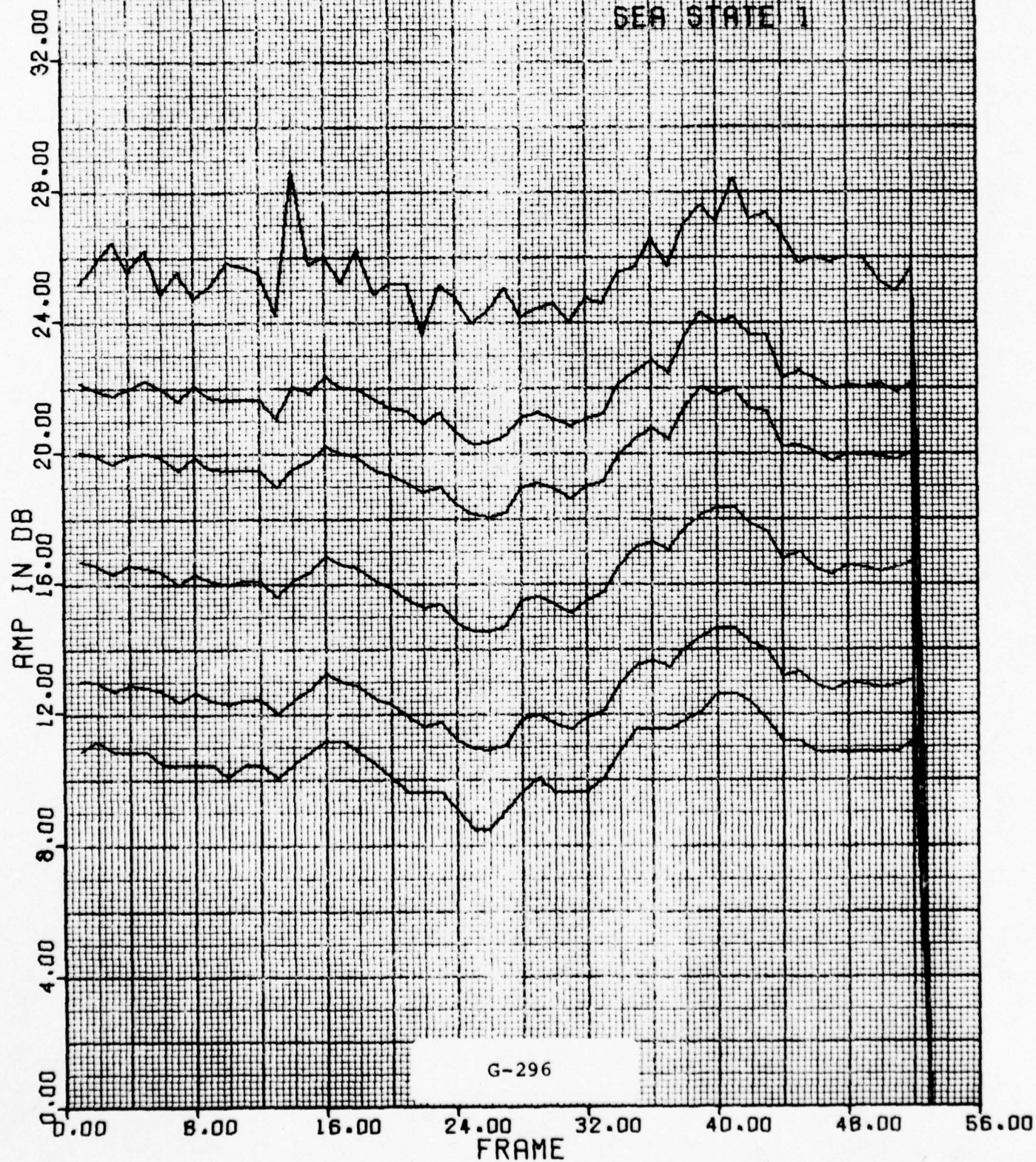
ABSOLUTE

RUN 8 FLI 11

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 1



FR STAT8

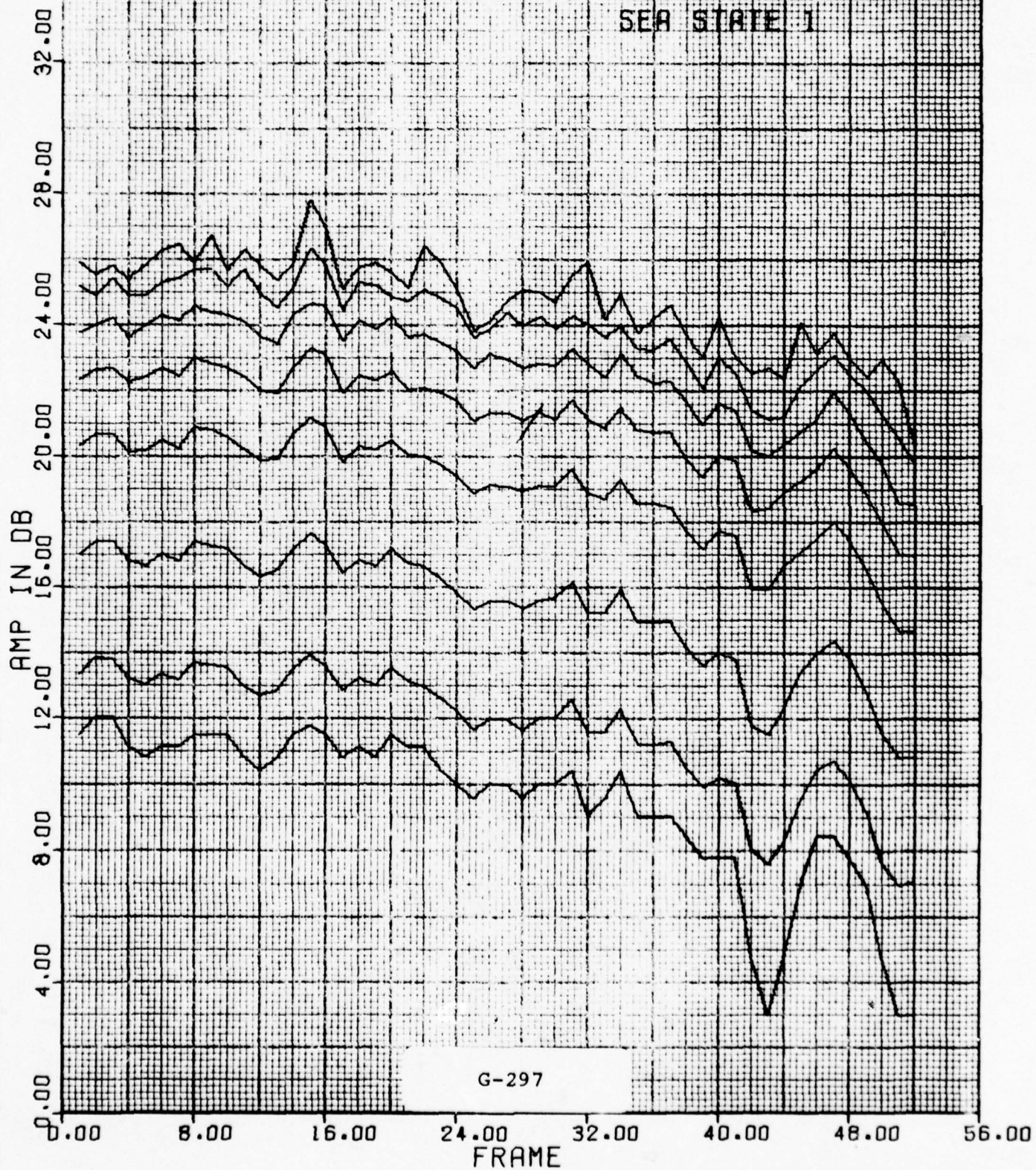
ABSOLUTE

RUN 9 FLT 11

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 1



FR STATS

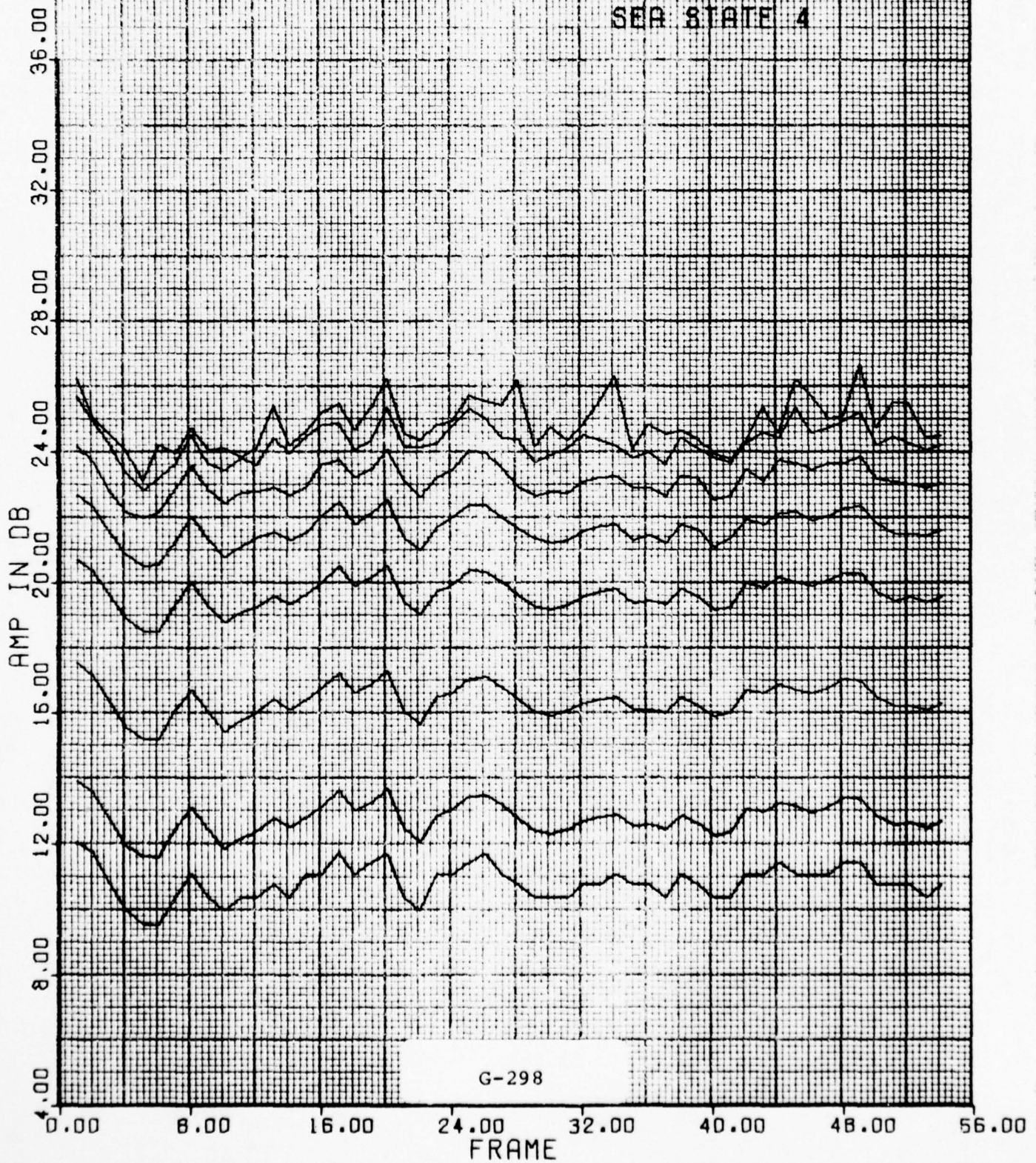
ABSOLUTE

RUN 1 FLT 16

ALT (KFT) 1.1

UP-WIND

SEA STATE 4



FR STATS

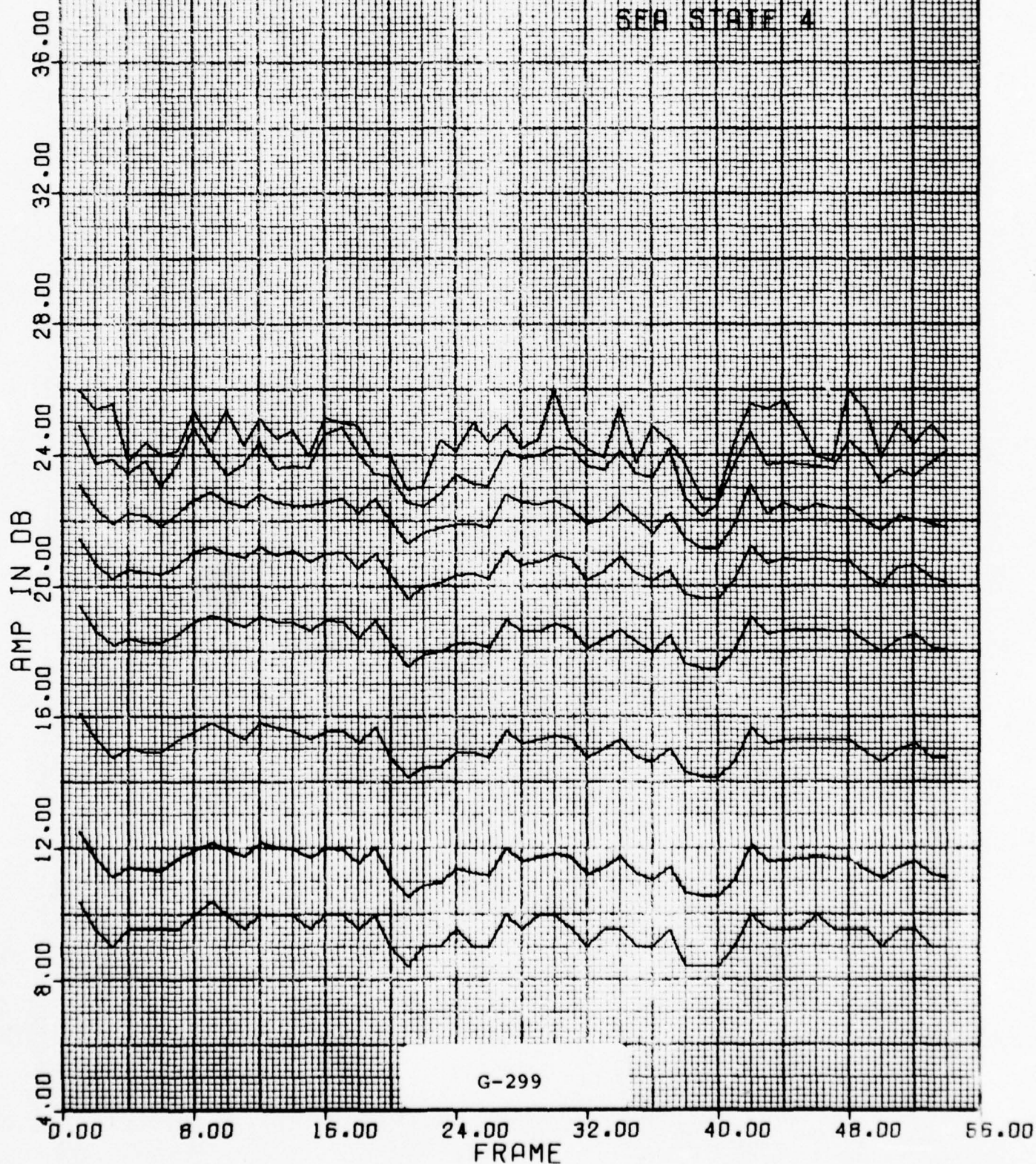
ABSOLUTE

RUN 2 FLT 16

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



FR STATS

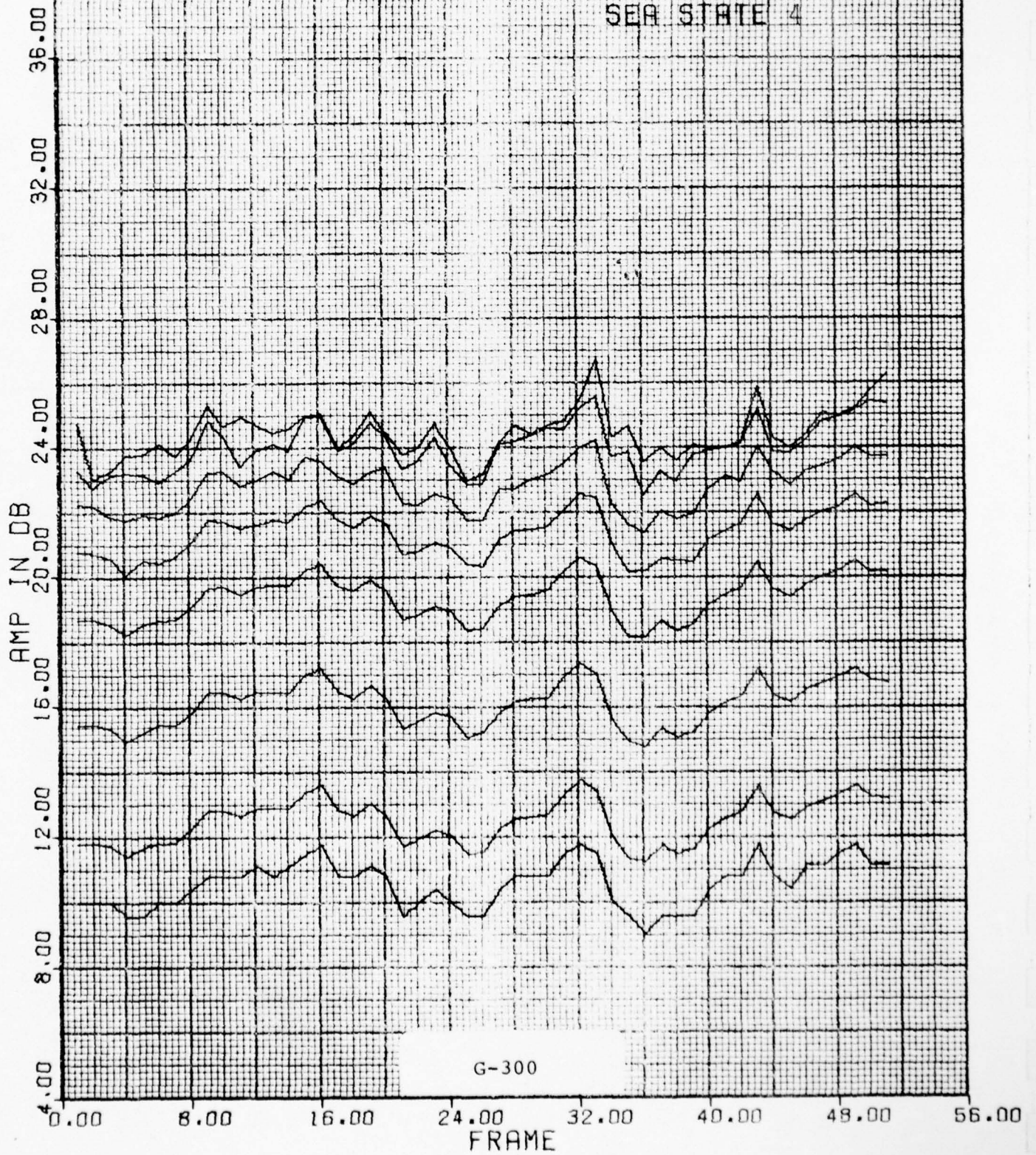
ABSOLUTE

RUN 3 FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4



FR STAT8

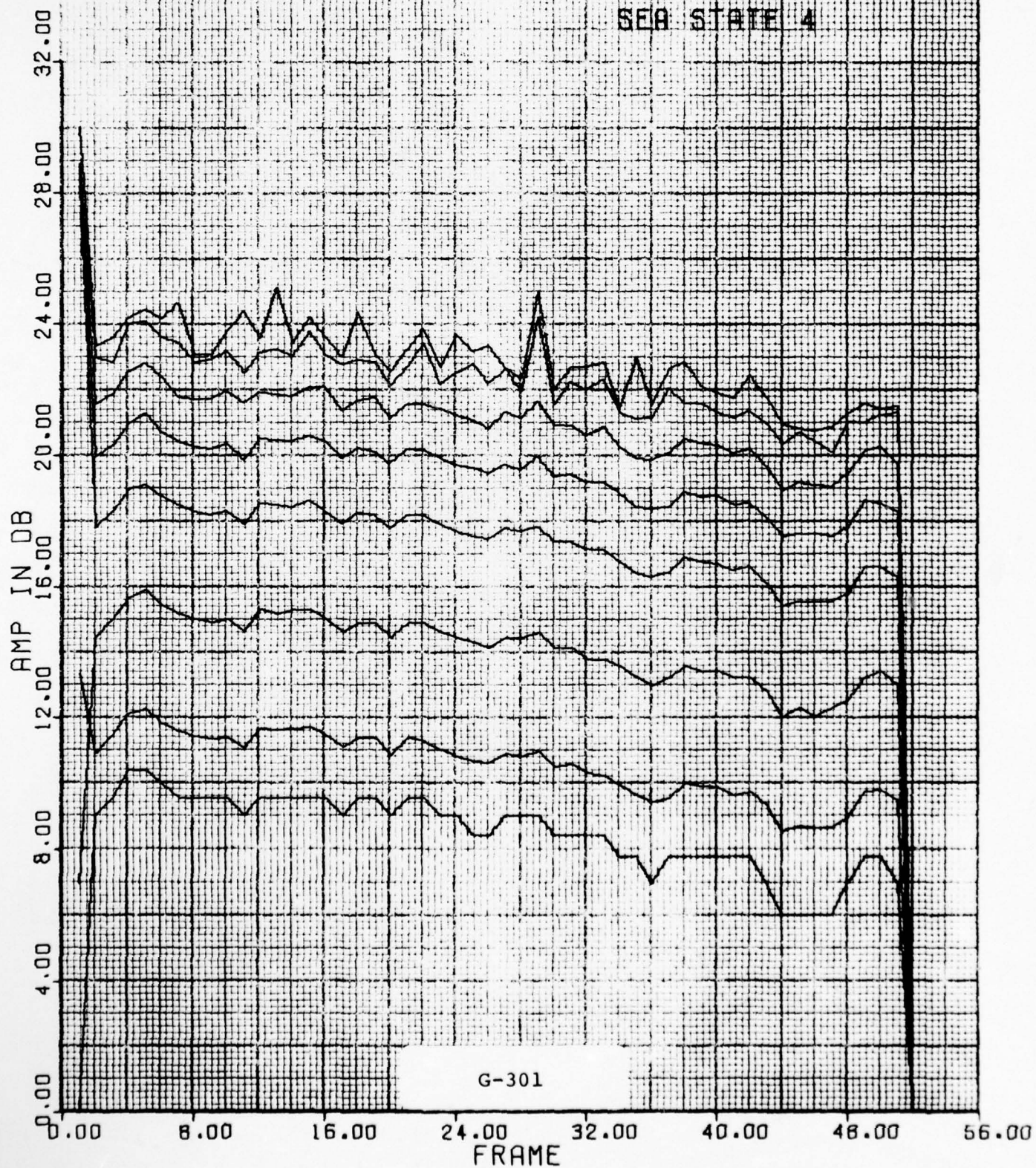
ABSOLUTE

RUN 5 FLI 16

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4



FR STATS

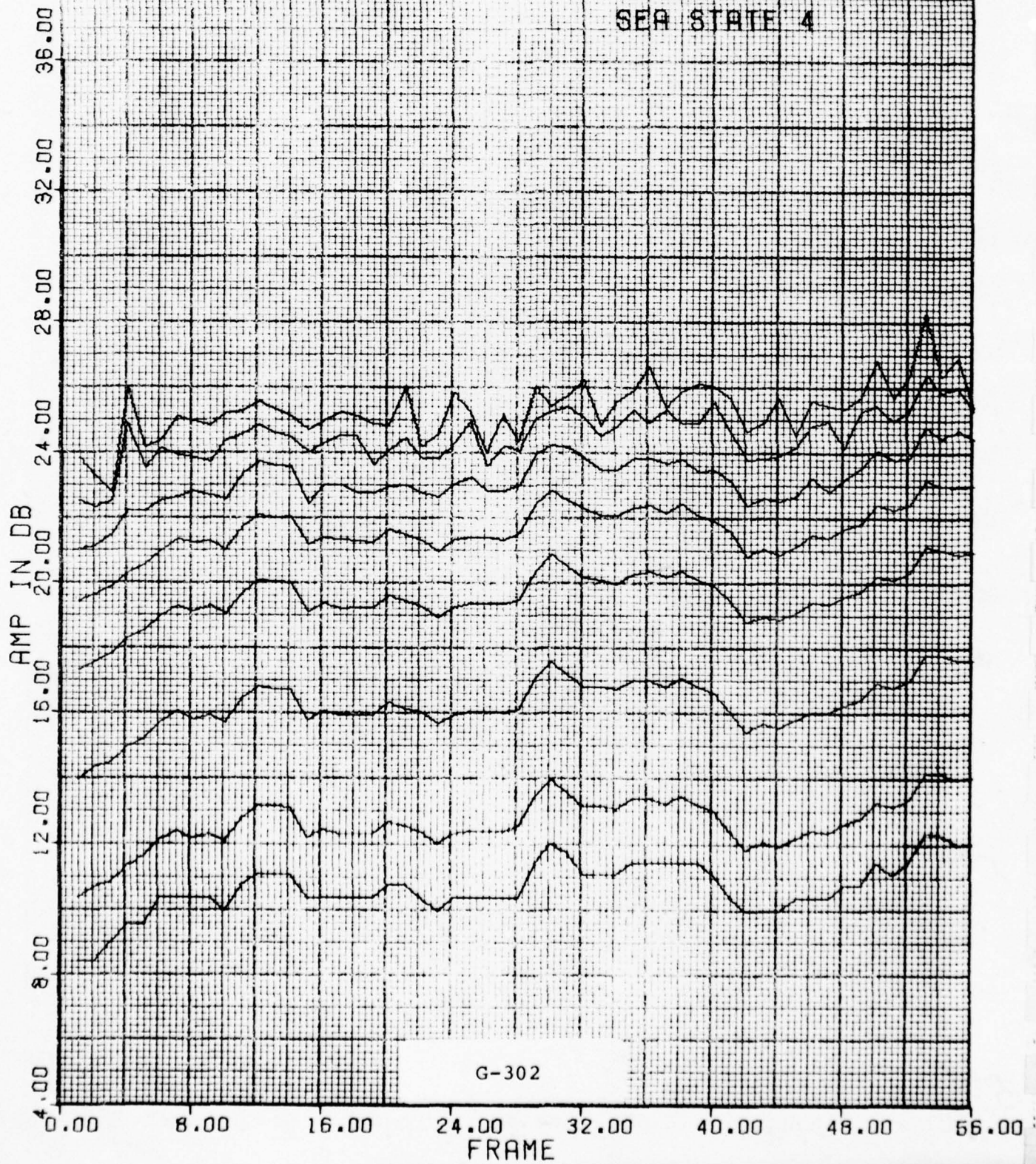
ABSOLUTE

RUN 6 FLT 16

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



FR STATS

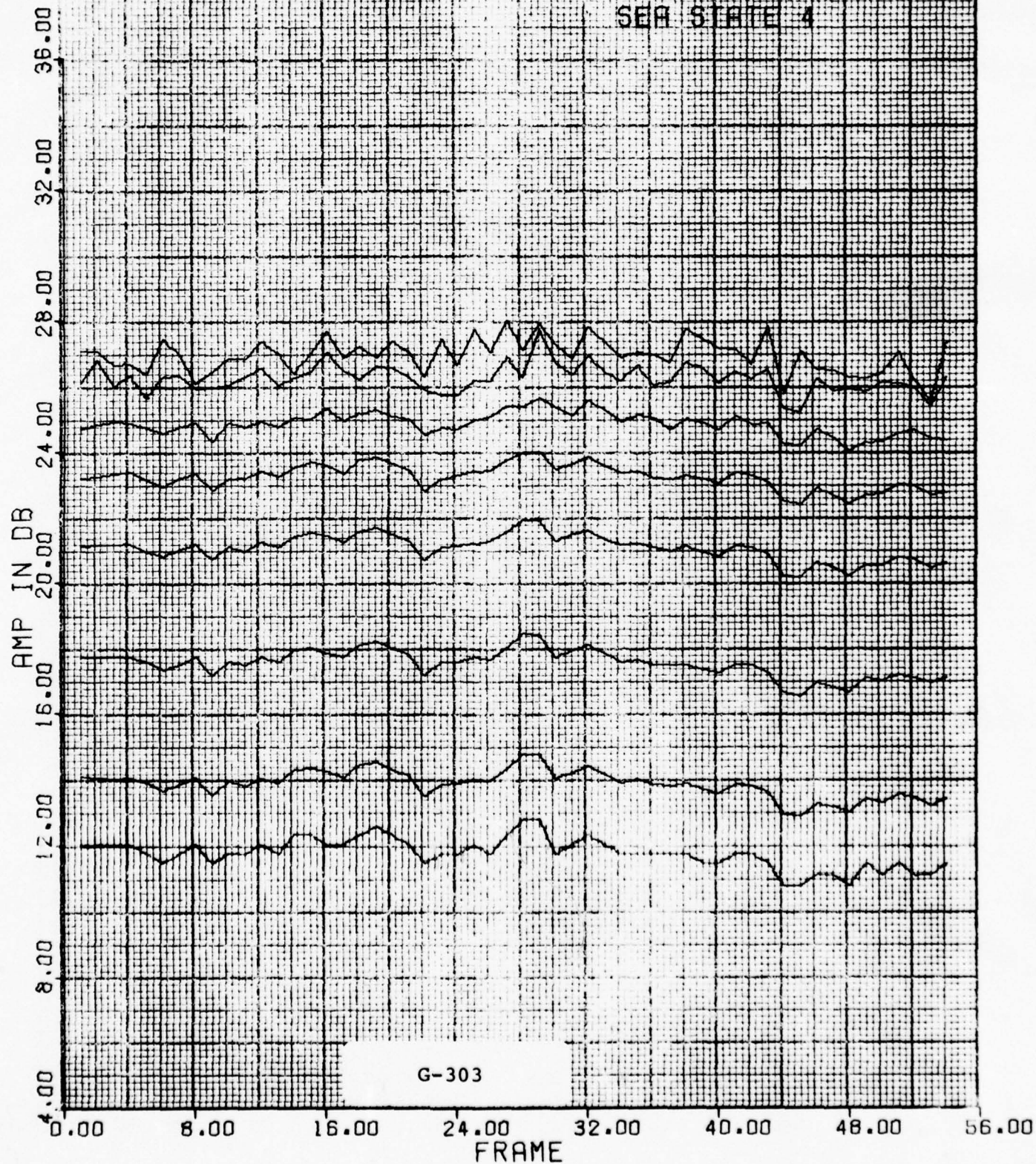
ABSOLUTE

RUN 7 FLT 18

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



FR STATS

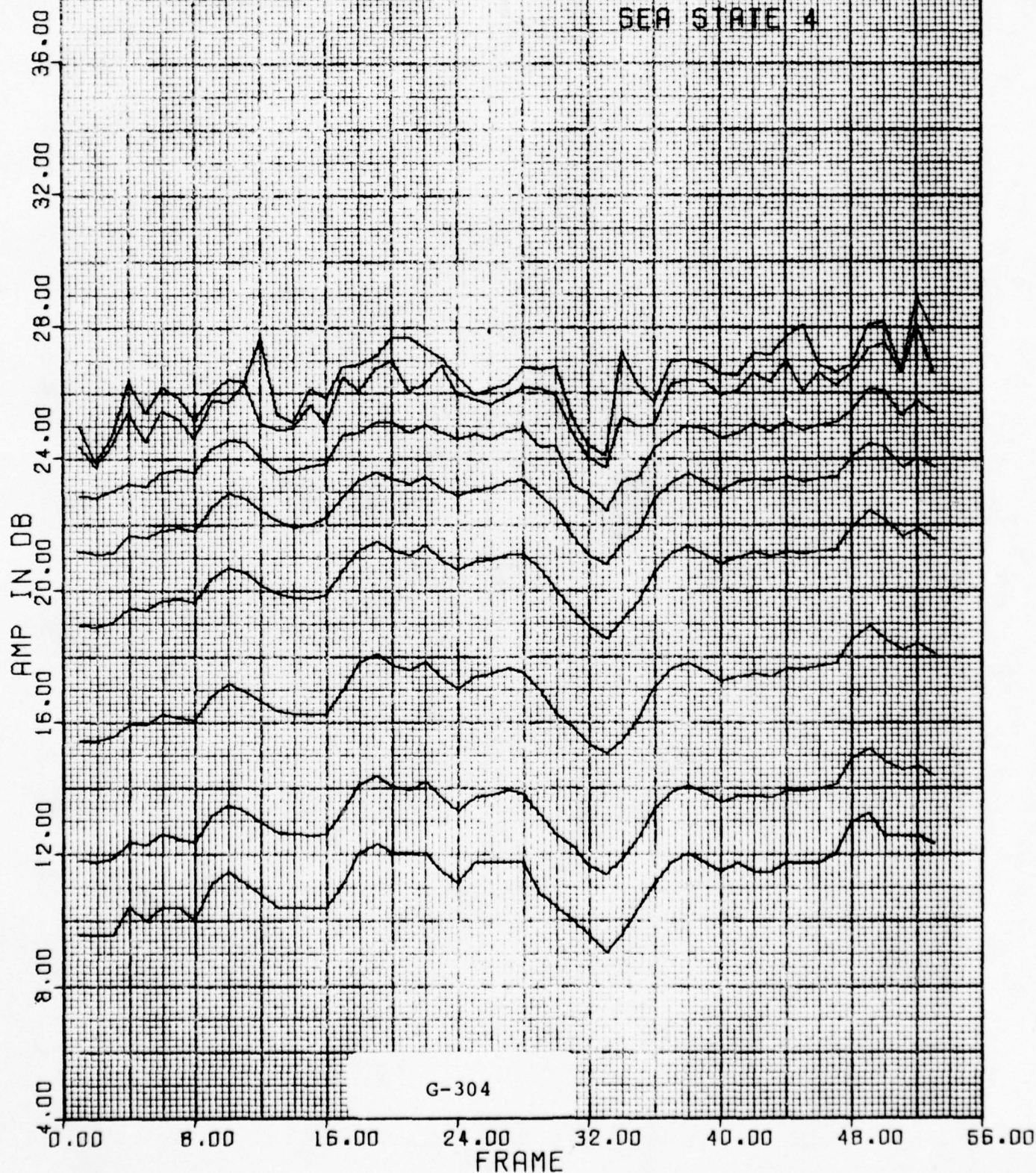
ABSOLUTE

RUN 9 FLT 16

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4



FR STARS

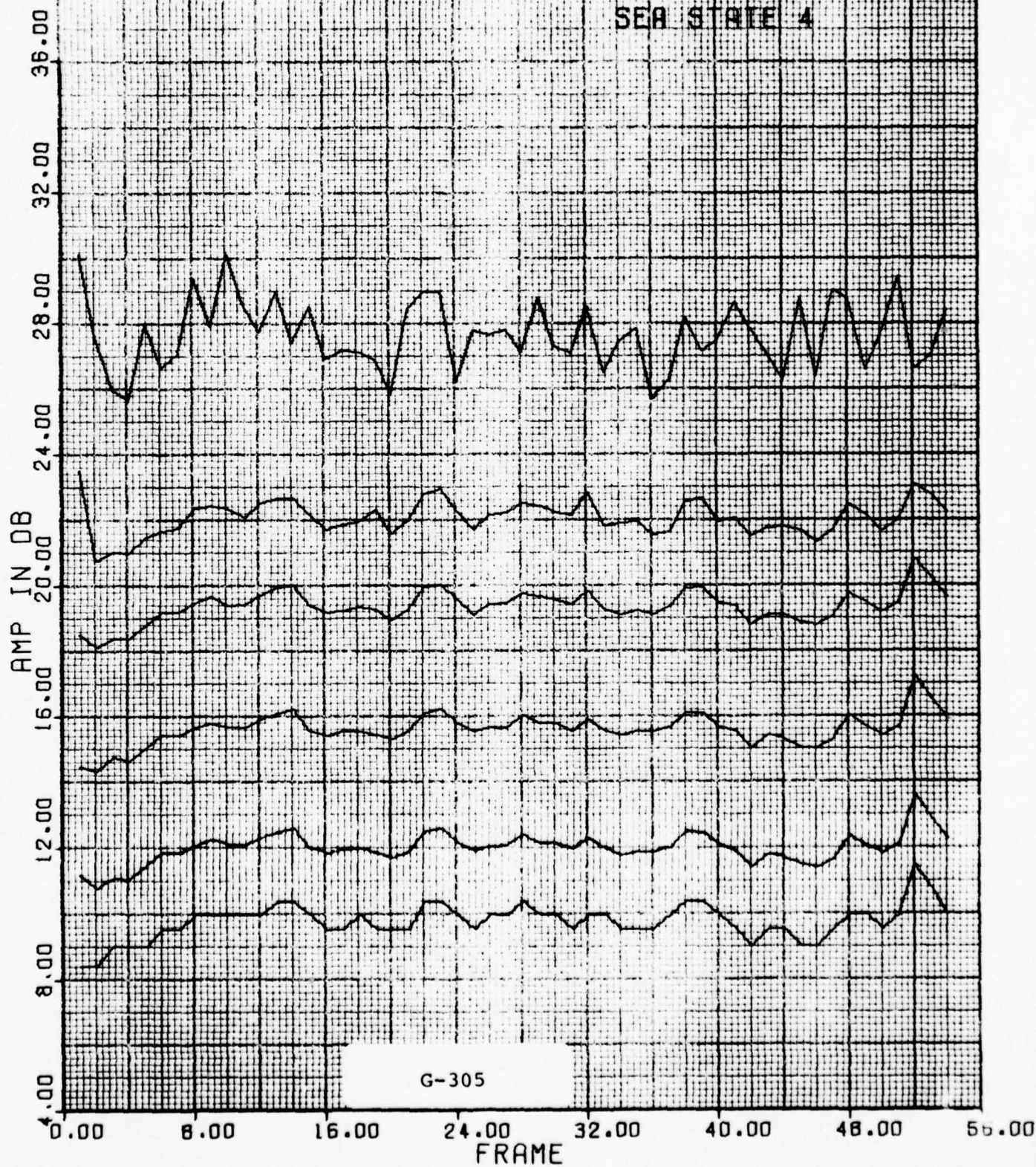
ABSOLUTE

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



ER STATS

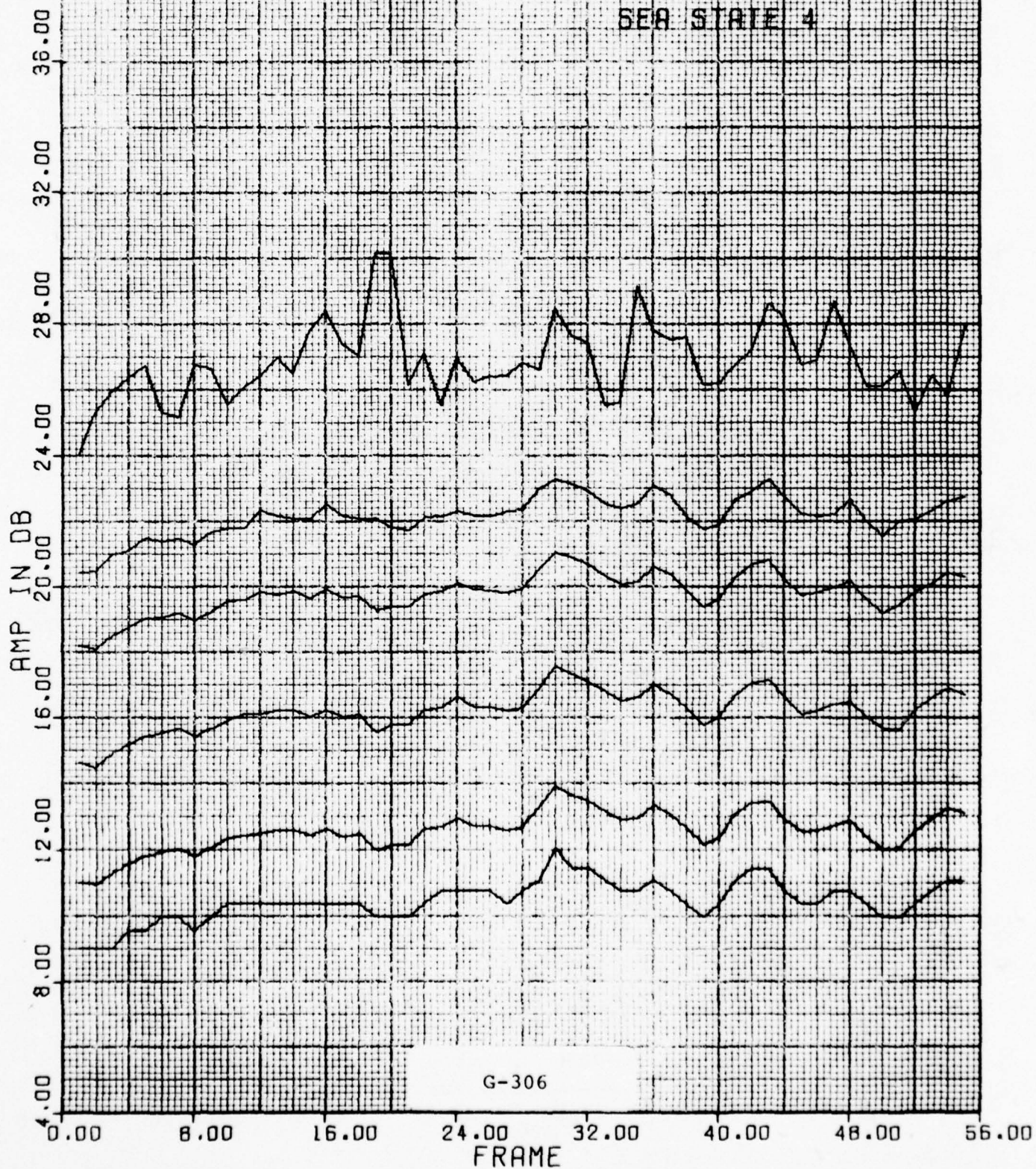
ABSOLUTE

RUN 7 FLI 17

ALI (KFI) 3.3

UP-WIND

SEA STATE 4



FR STATS

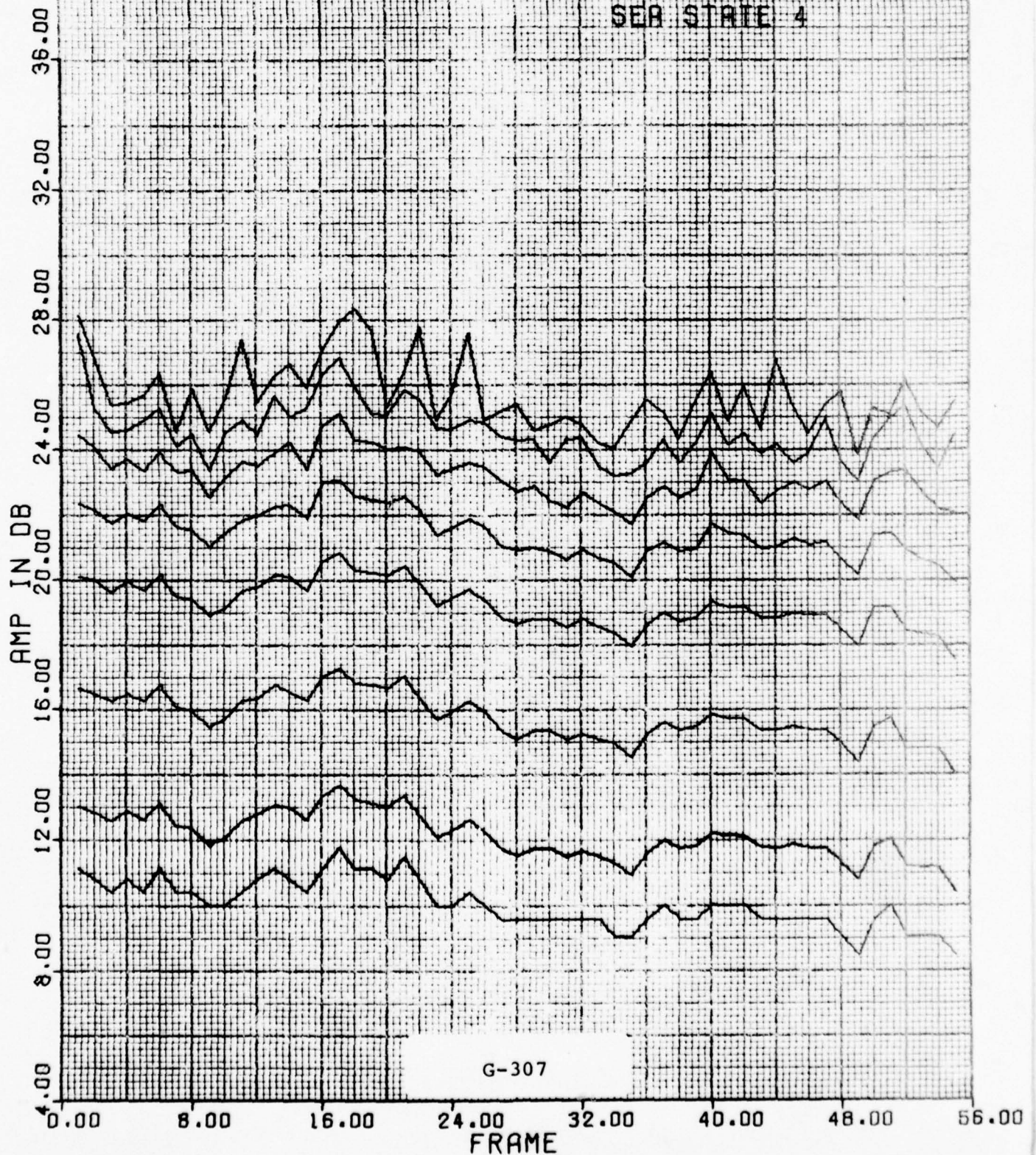
ABSOLUTE

RUN 8 FLT 17

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4



UNCLASSIFIED

1.3.2 Statistics versus Time (Normalized)

These plots show a selection of statistical parameters as they vary over the duration of a flight. Statistical parameters are plotted in dB with respect to the mean from bottom to top:

Median

Mean

10^{-1} point on Q curve

10^{-2} point on Q curve

10^{-3} point on Q curve

10^{-4} point on Q curve

10^{-5} point on Q curve (if sufficient data available)

Maximum Value

The horizontal axis is labeled in frames with each frame equal to 5.4 seconds.

FR STATS

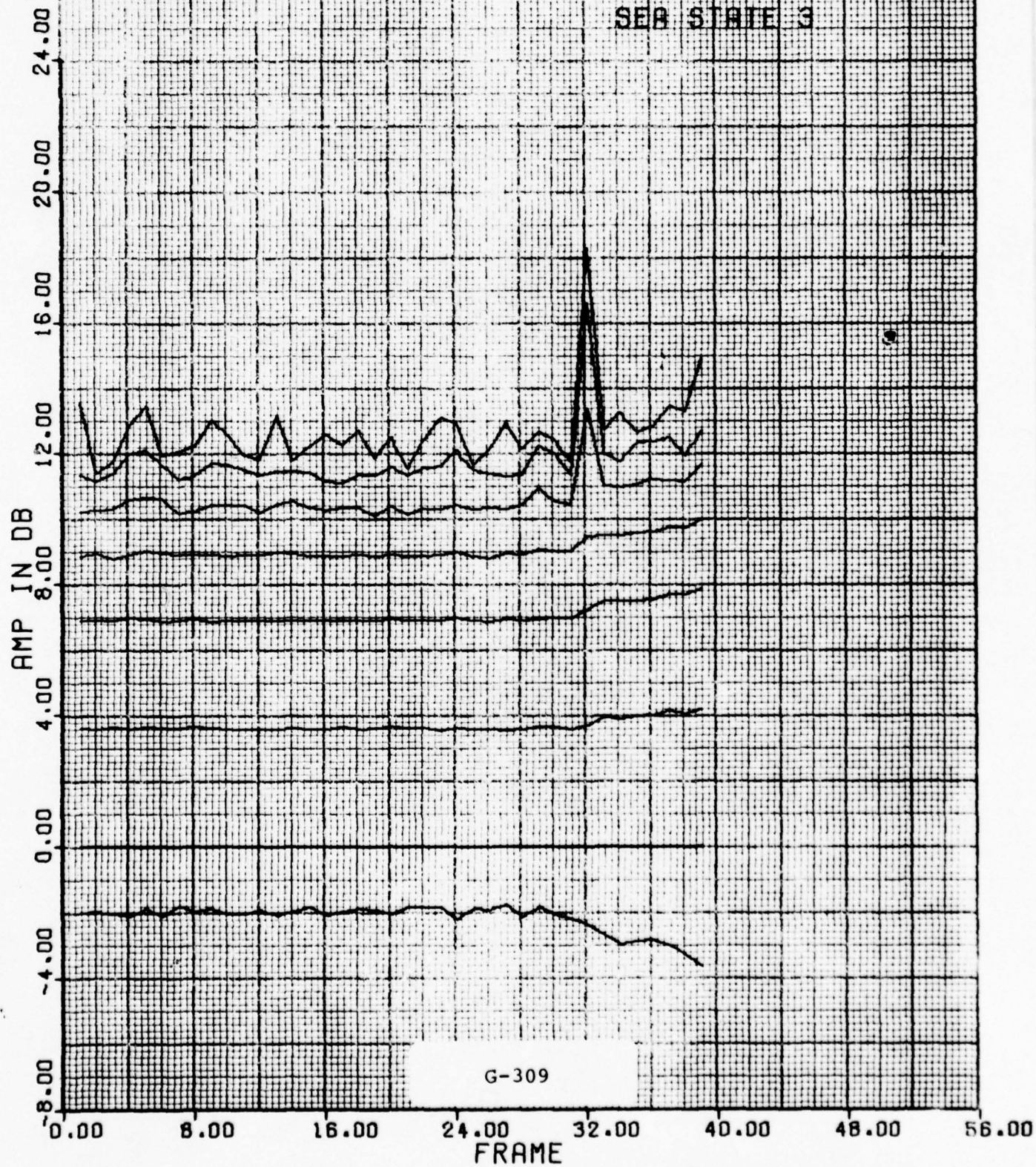
NORMALIZED

RUN 1 FLT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3



FR STATS

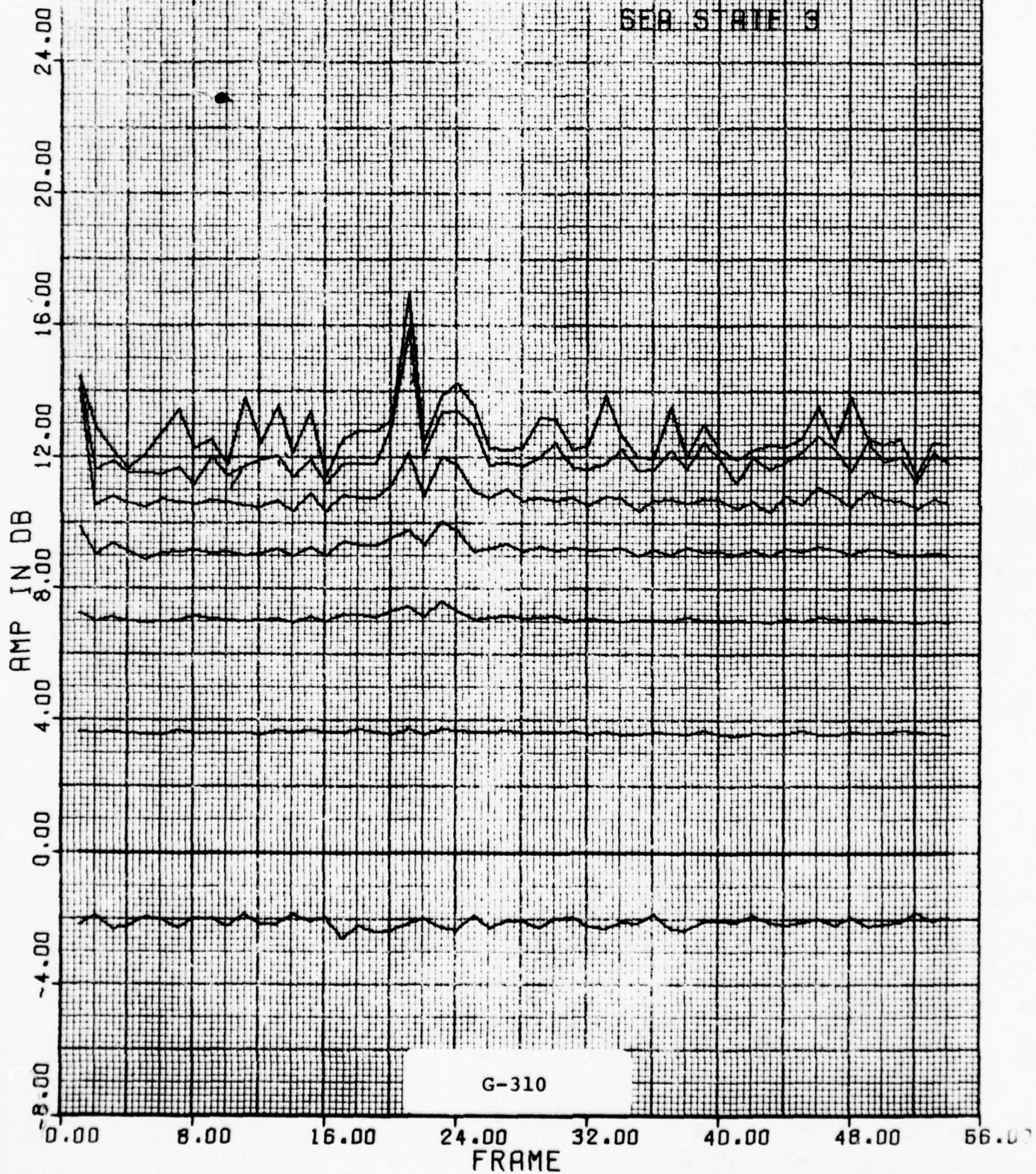
NORMALIZED

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



FR STATS

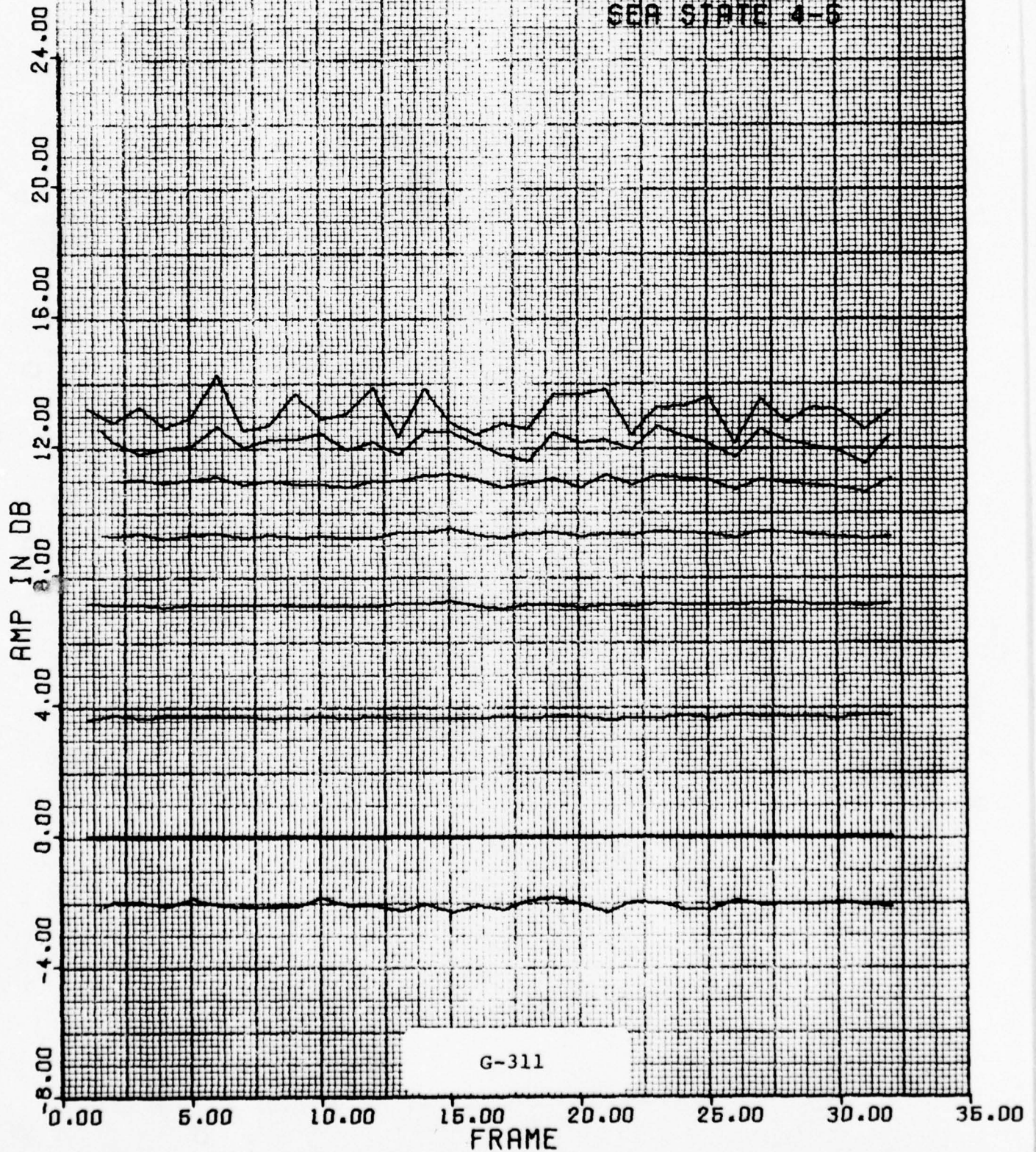
NORMALIZED

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5



FR STATS

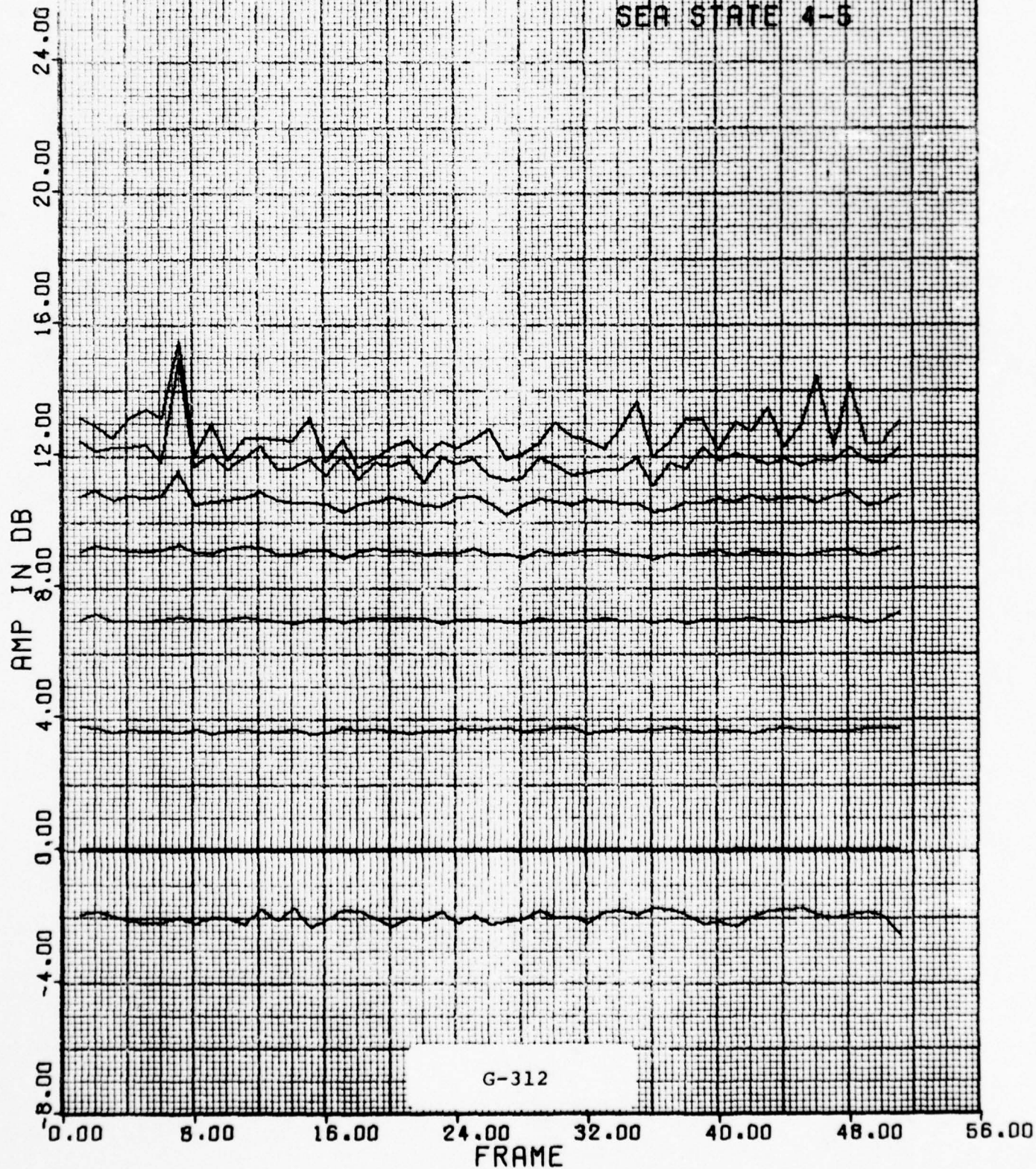
NORMALIZED

RUN 3 FLT 6

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4-5



FR STATS

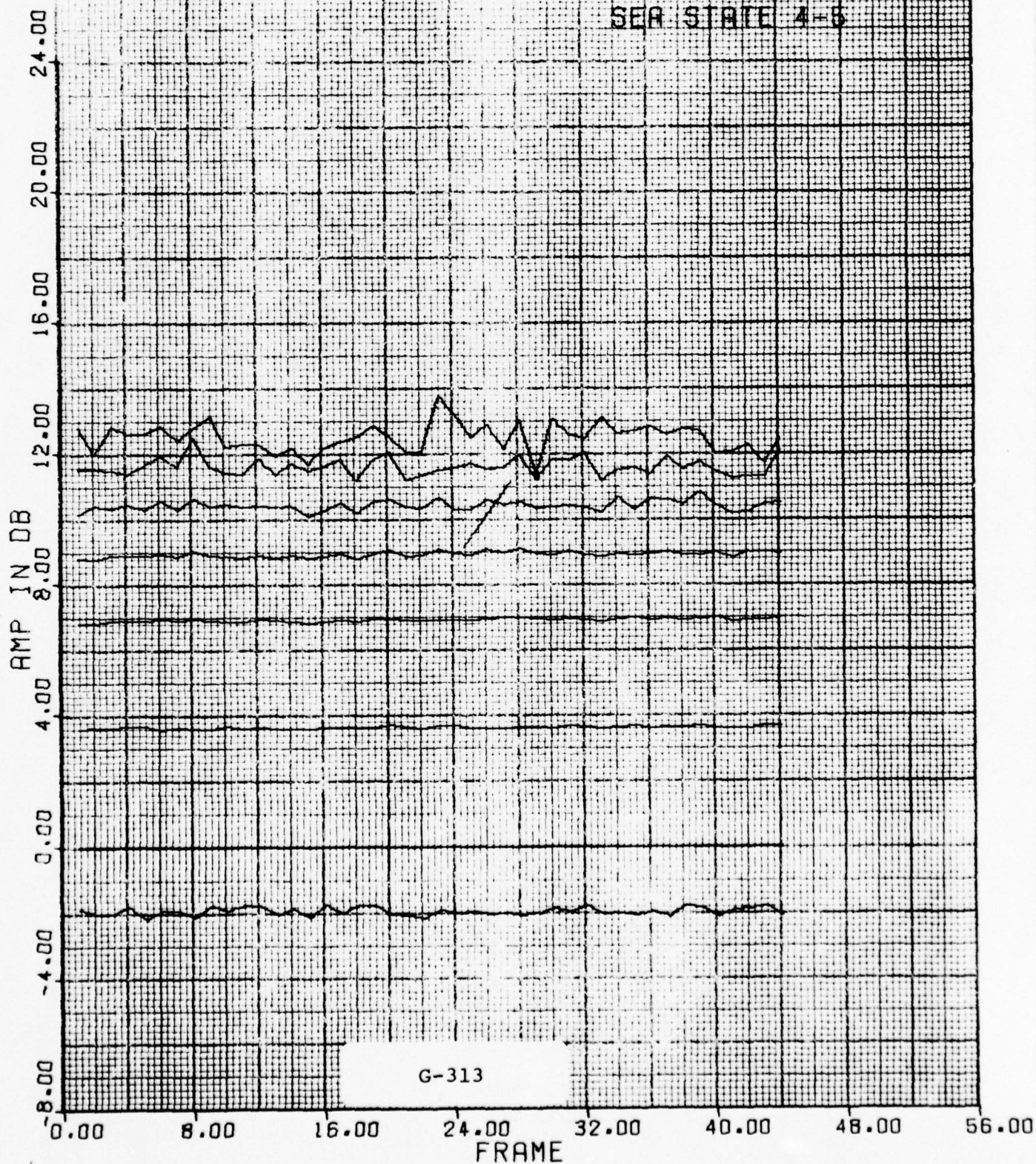
NORMALIZED

RUN 4 FLT 6

ALT (KFT) 2.2

UP-WIND

SEA STATE 4-5



FR STATS

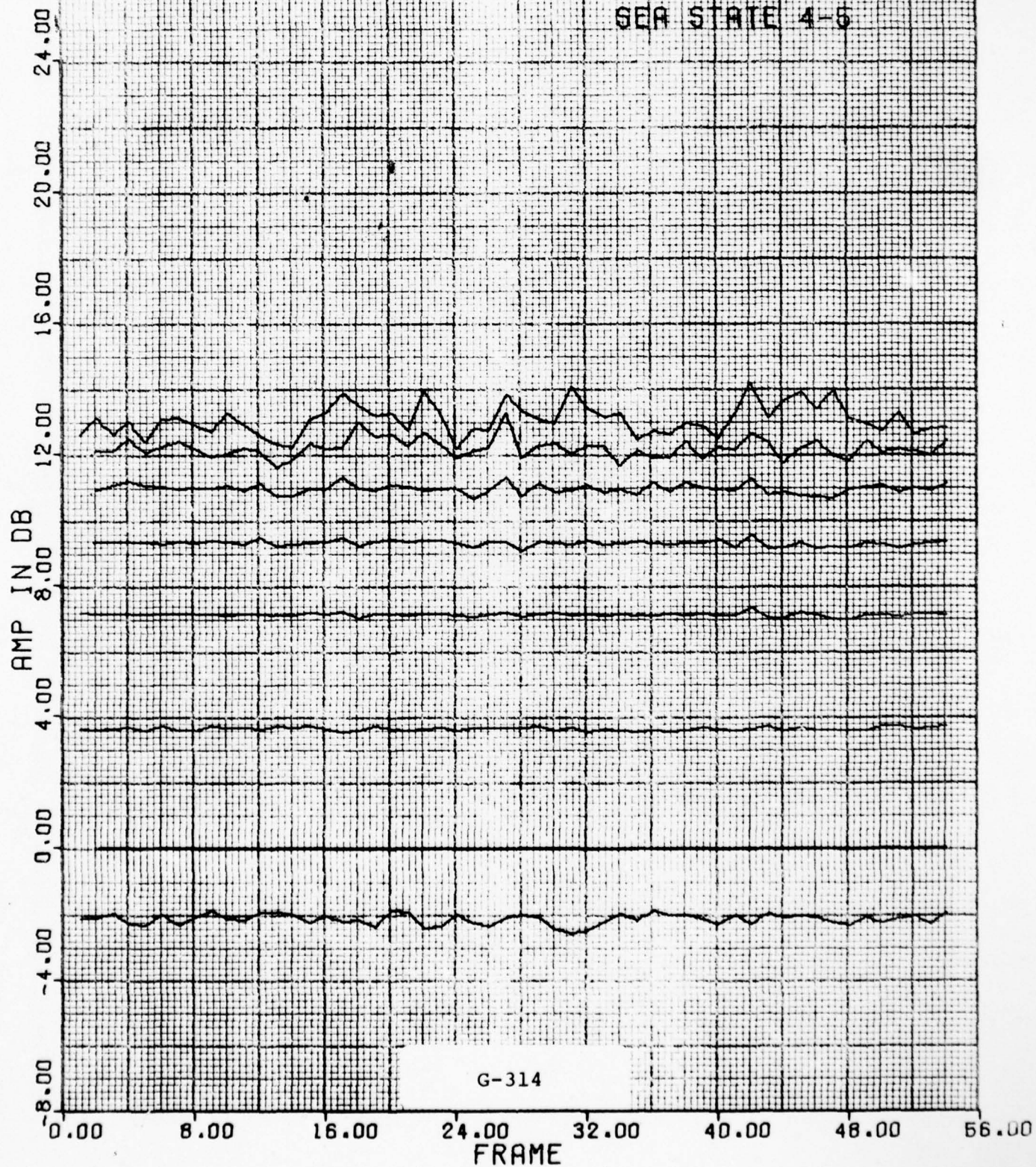
NORMALIZED

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



FR STATS

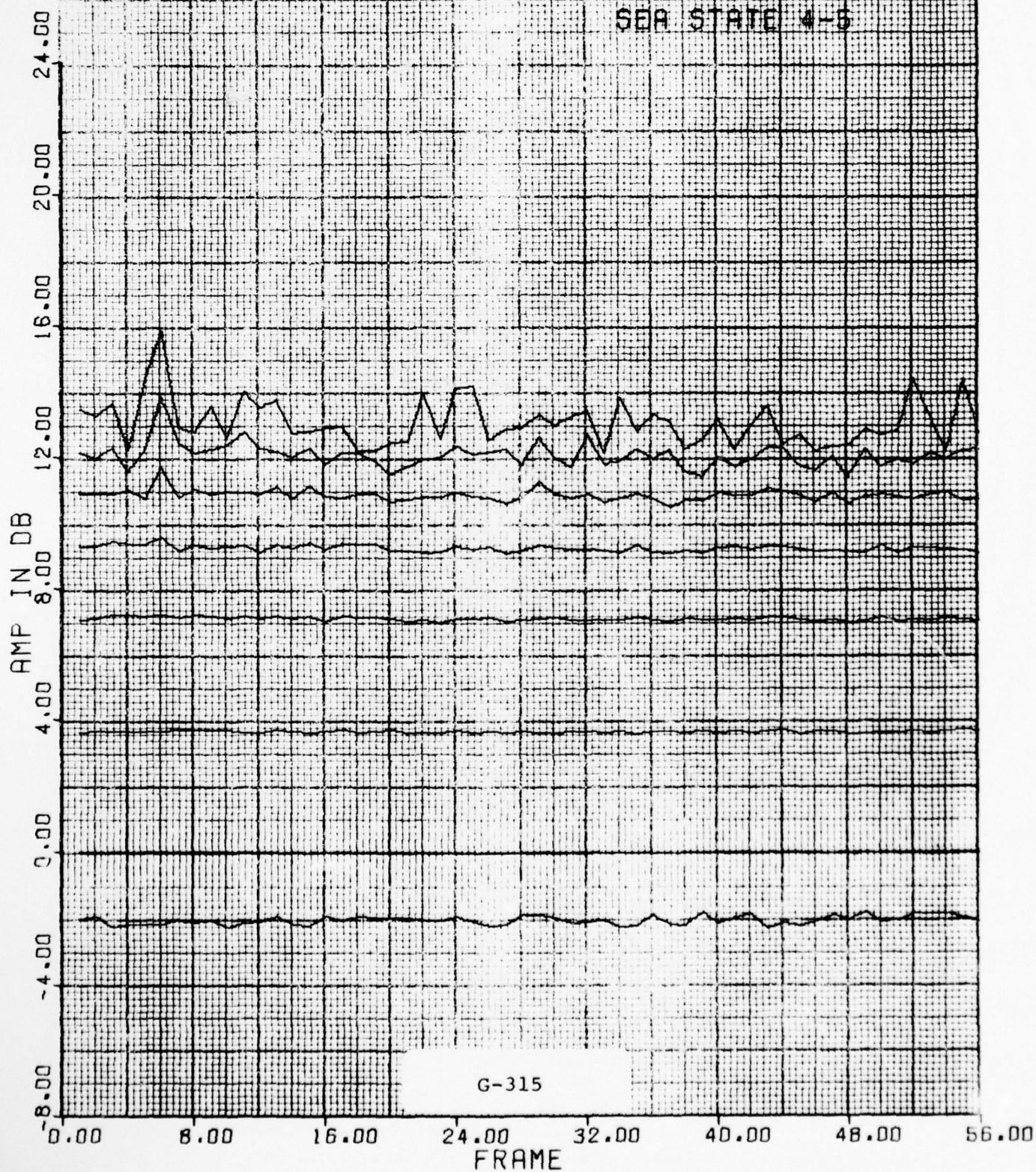
NORMALIZED

RUN 6 FLT 6

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4-5



FR STATS

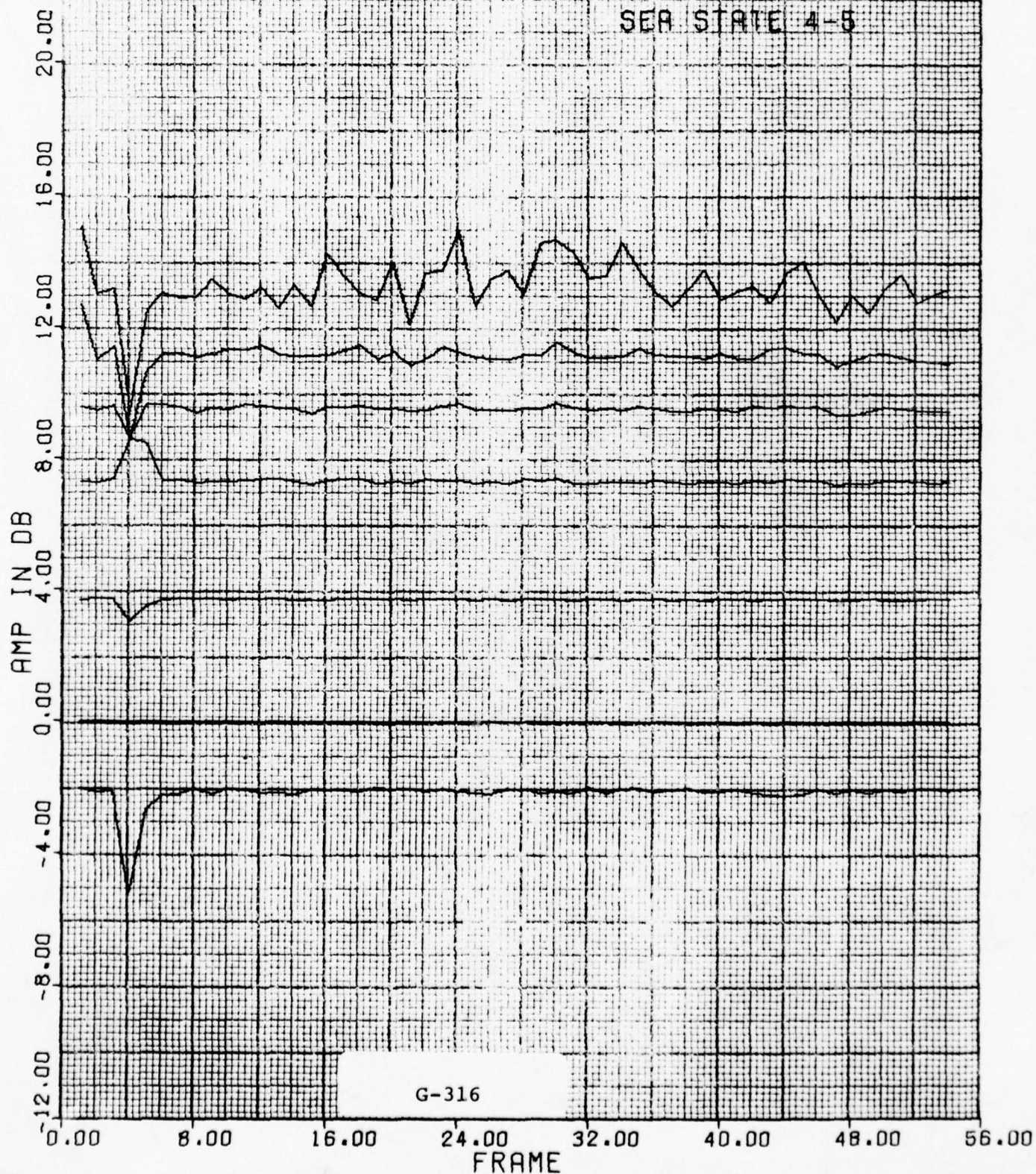
NORMALIZED

RUN 7 FLT 6

ALT (KFT) 3.3

UP-WIND

SEA STATE 4-5



FR STATS

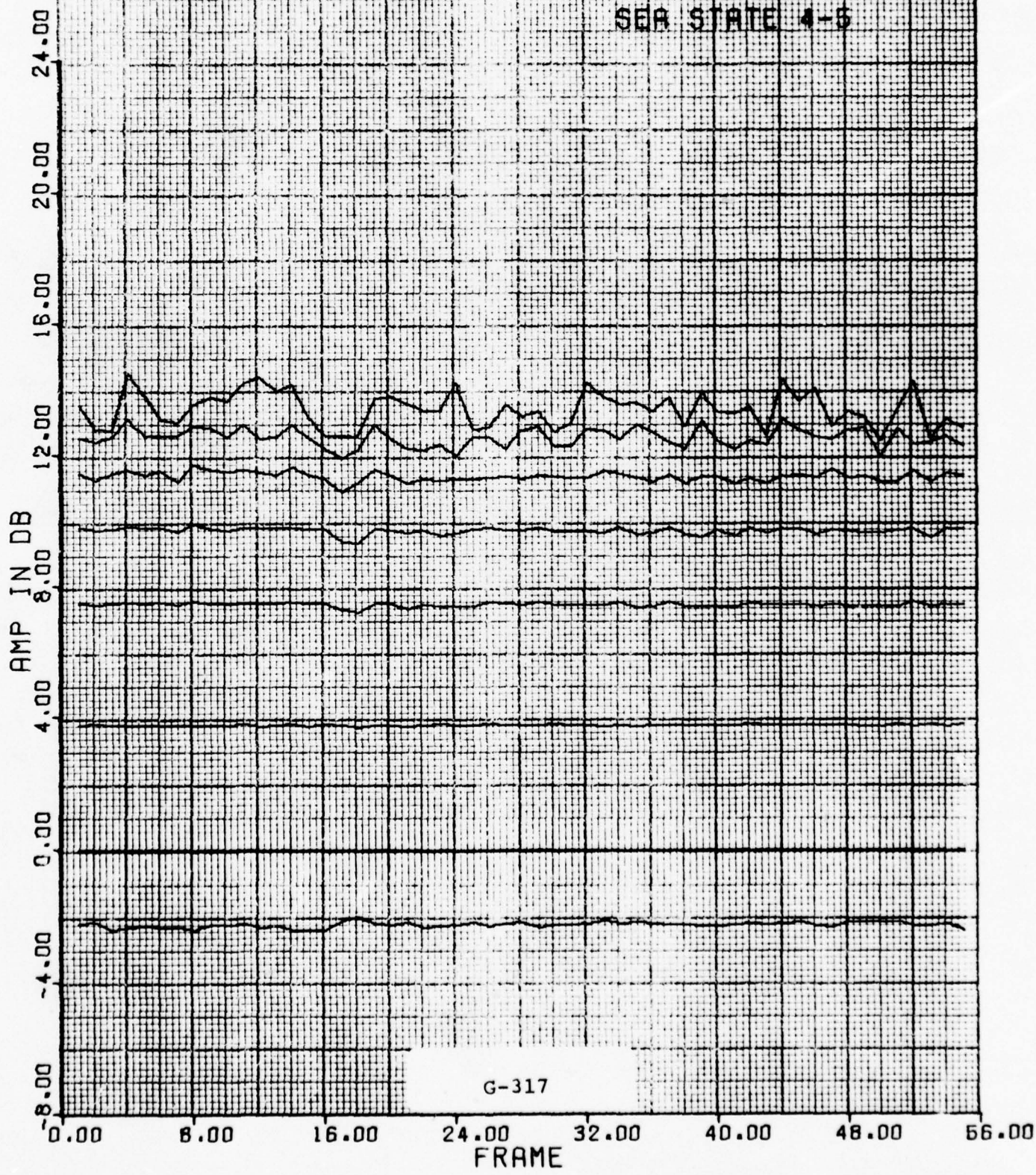
NORMALIZED

RUN 8 FLT 6

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4-5



FR STATS

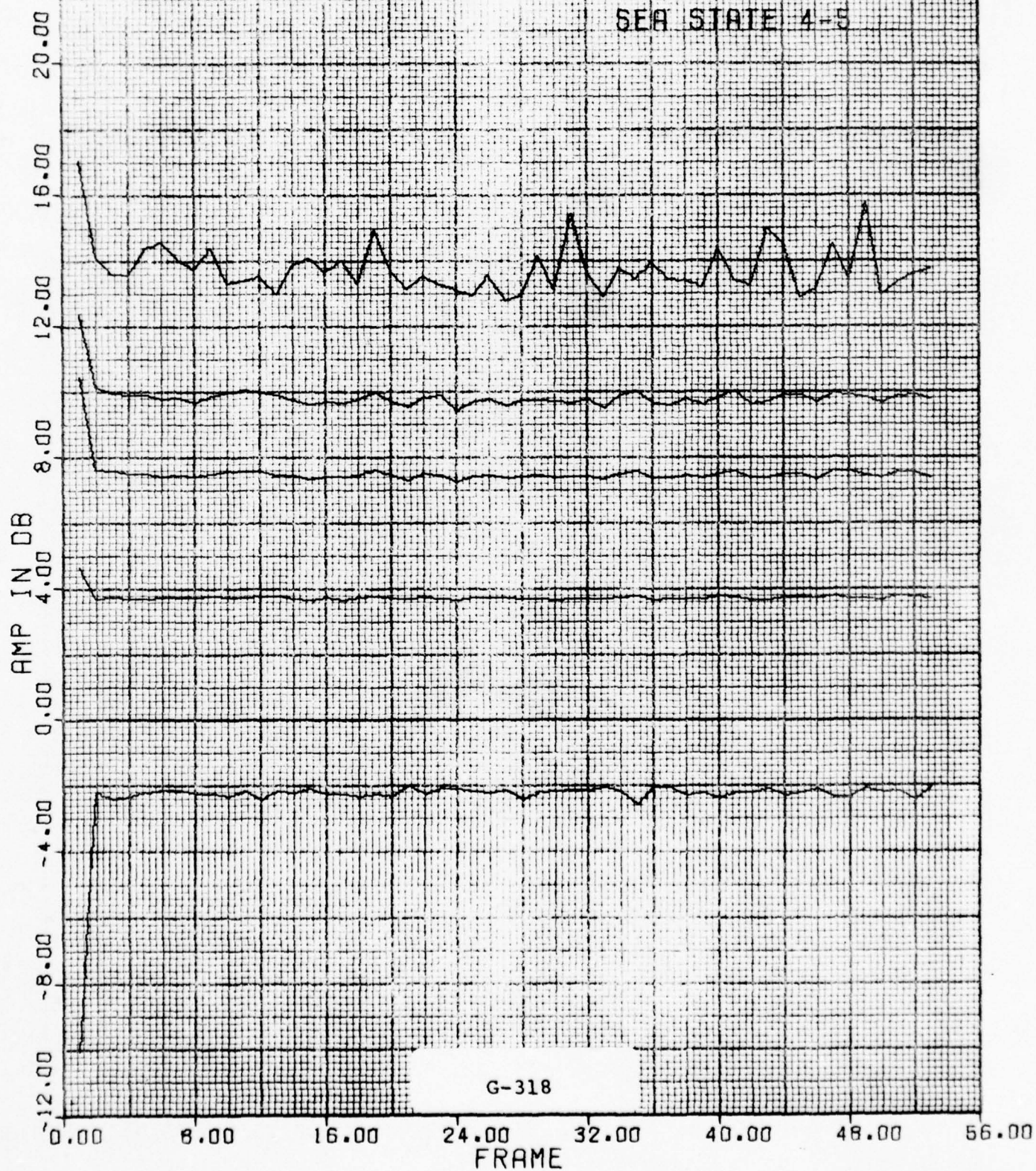
NORMALIZED

RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5



FR STATS

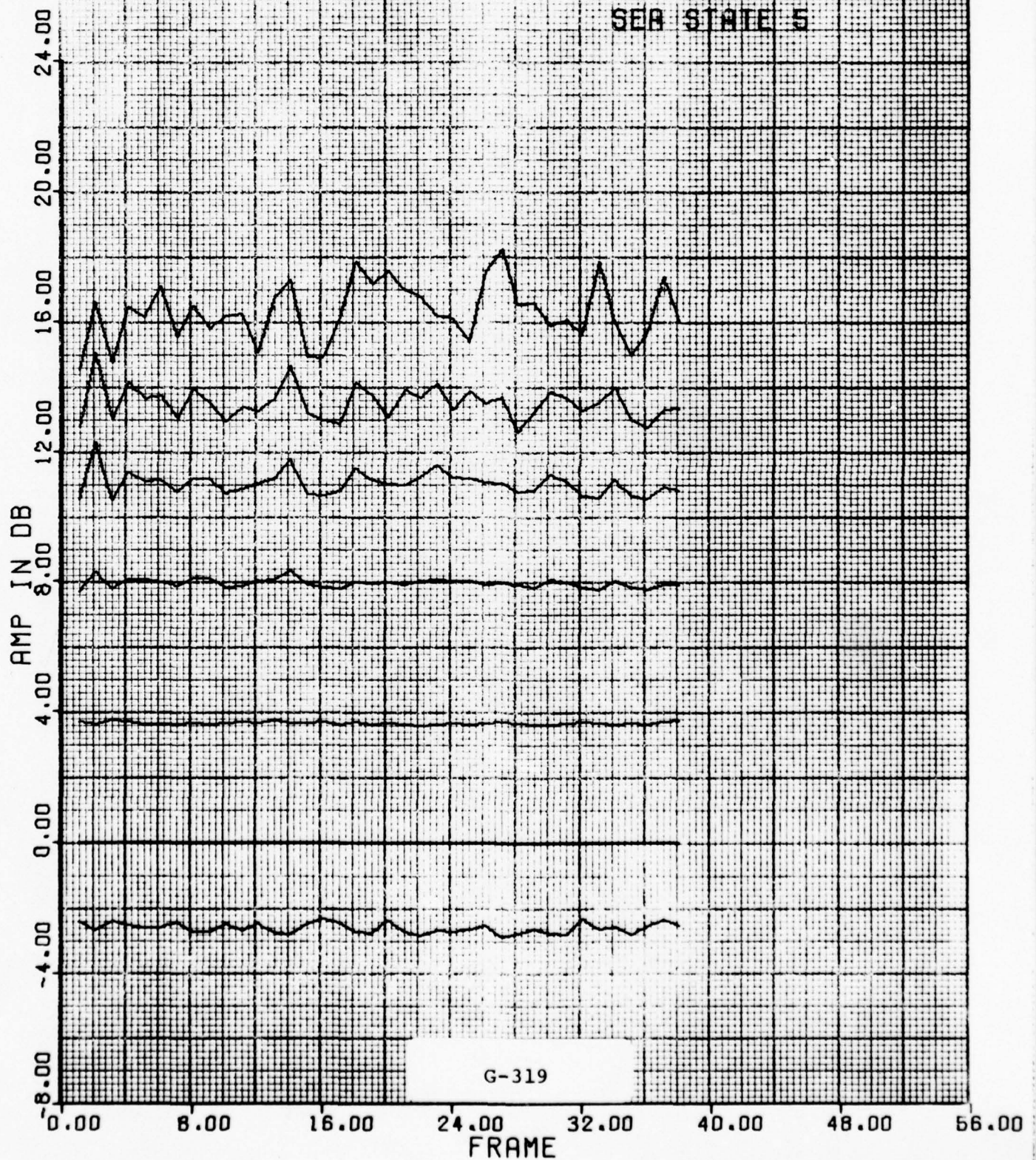
NORMALIZED

RUN 1 FLT 7

ALT (KFT) 1.1

UP-WIND

SEA STATE 5



FR STATS

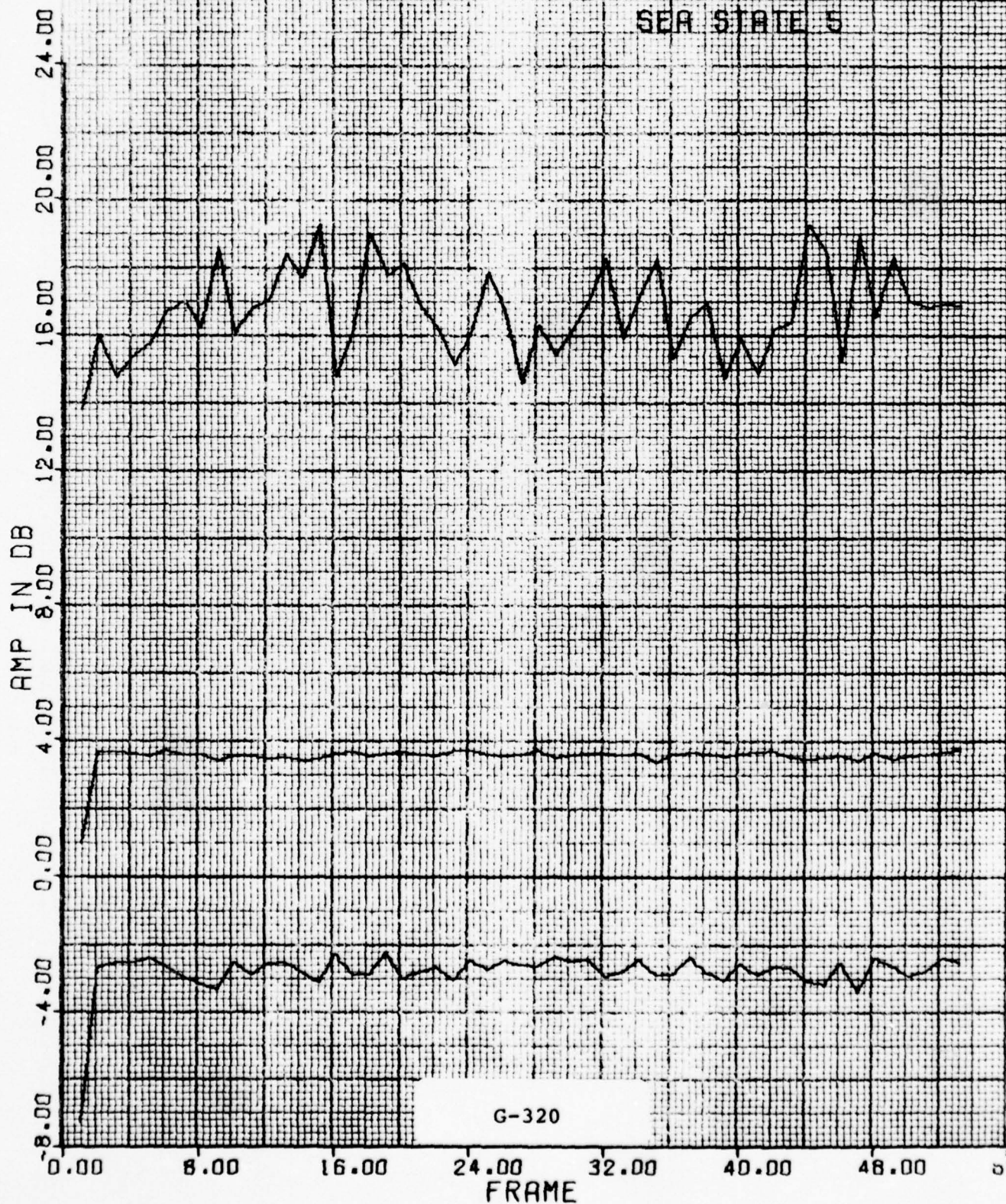
NORMALIZED

RUN 2 FLT 7

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 5



FR STATS

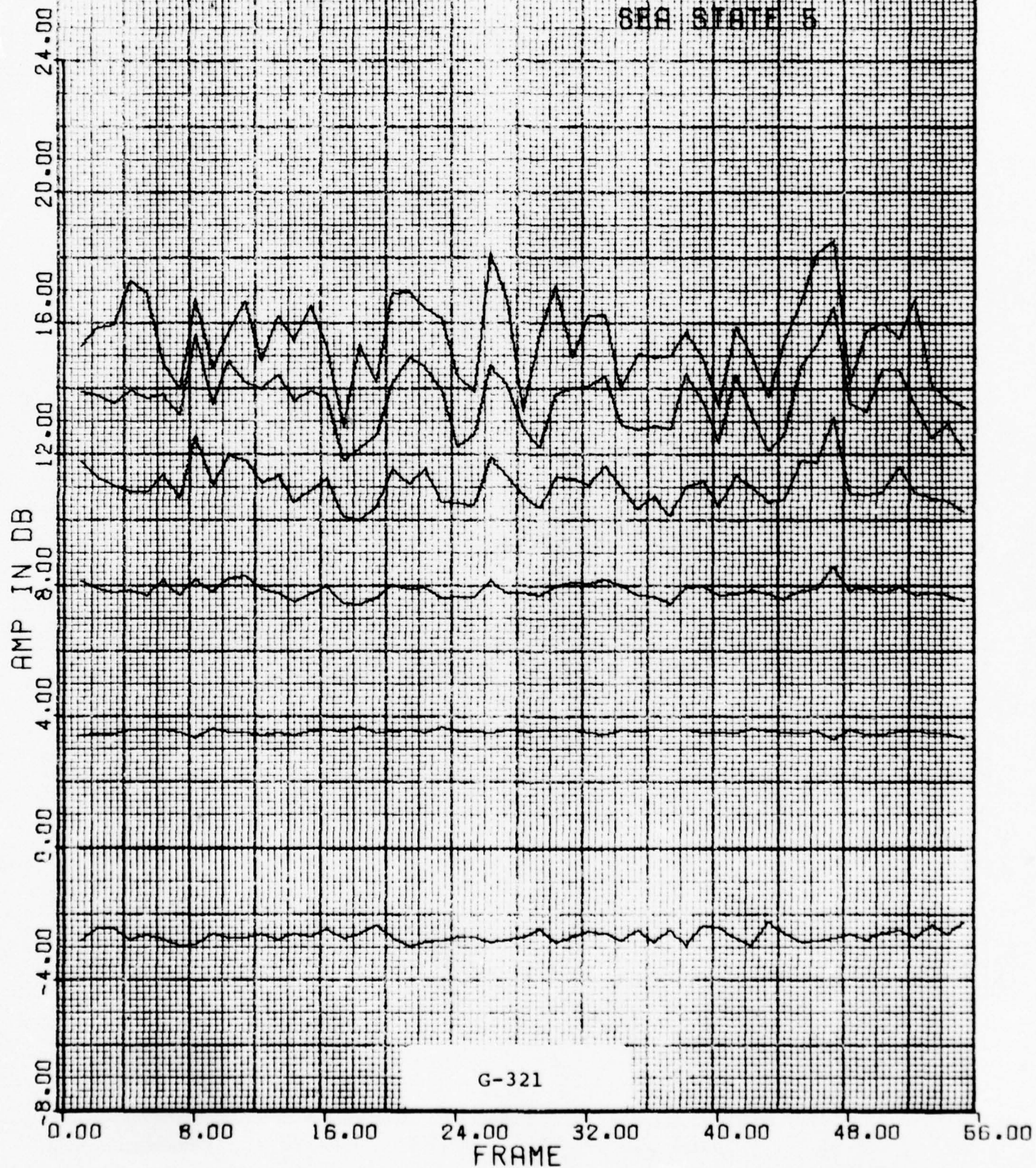
NORMALIZED

RUN 3 FLT 7

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 5



FR STATS

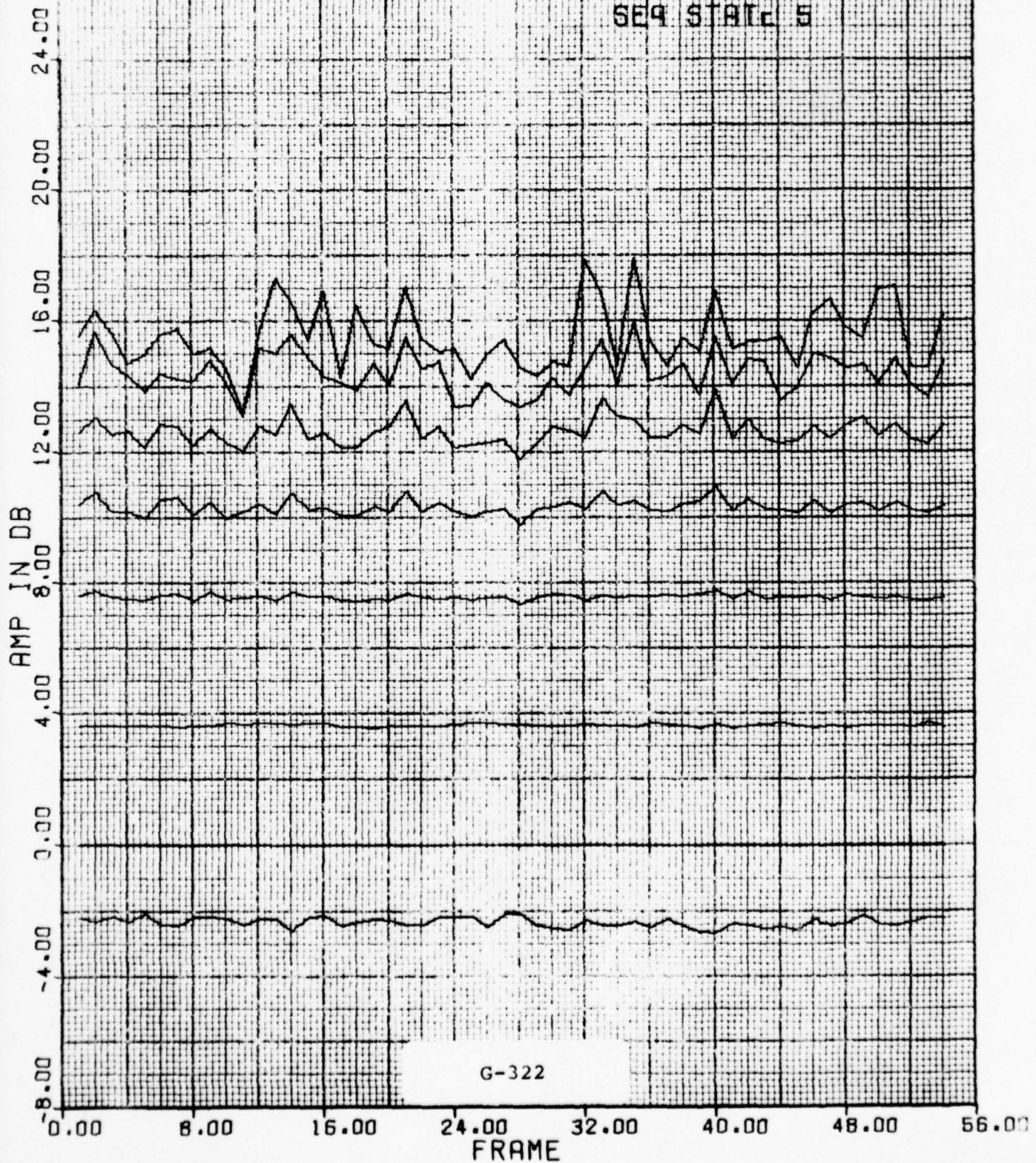
NORMALIZED

RUN 4 FLT 7

ALT (KFT) 2.2

JP-WIND

SEA STATE 5



FR STATS

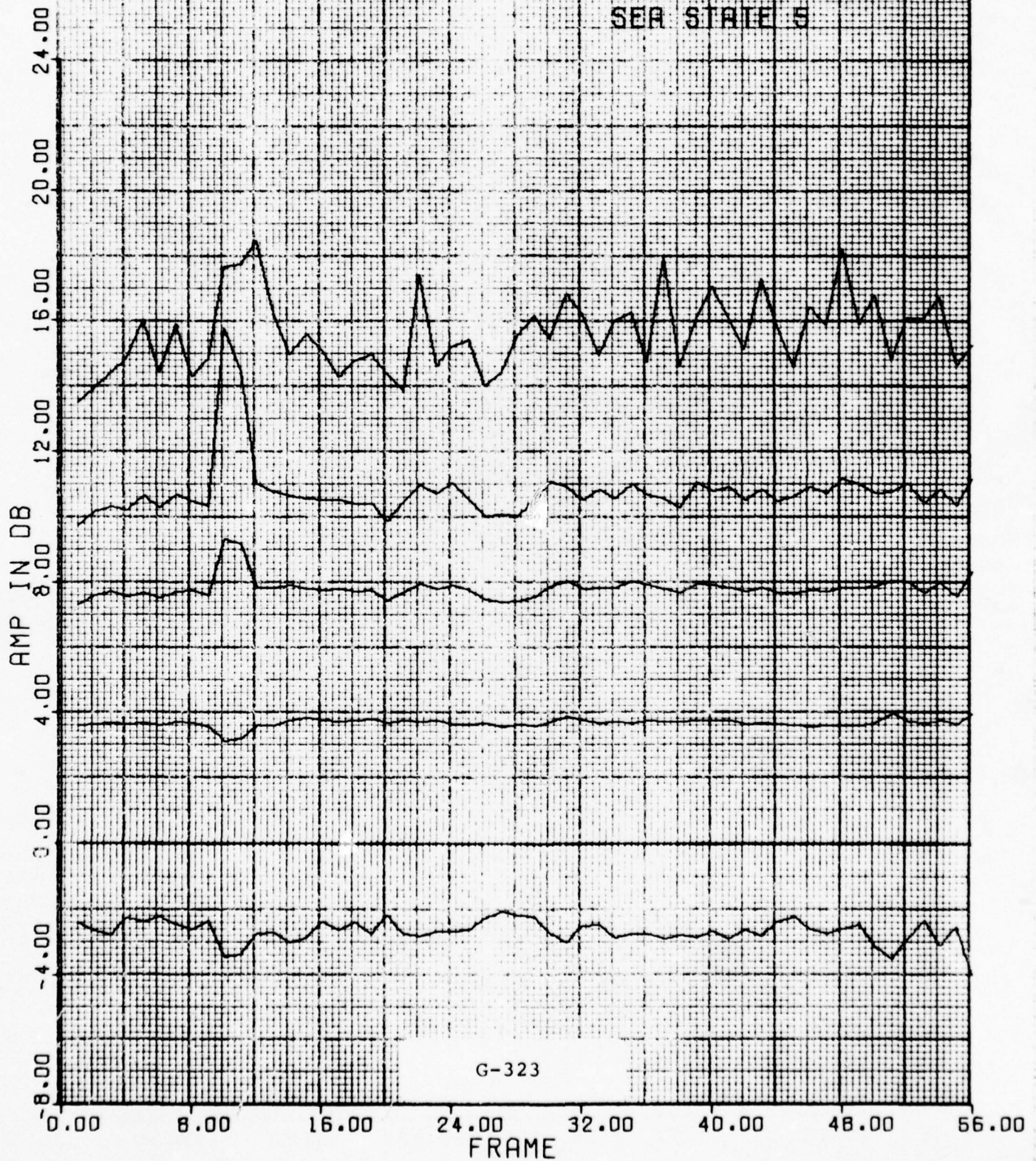
NORMALIZED

RUN 6 FLT 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5



G-323

FR STATS

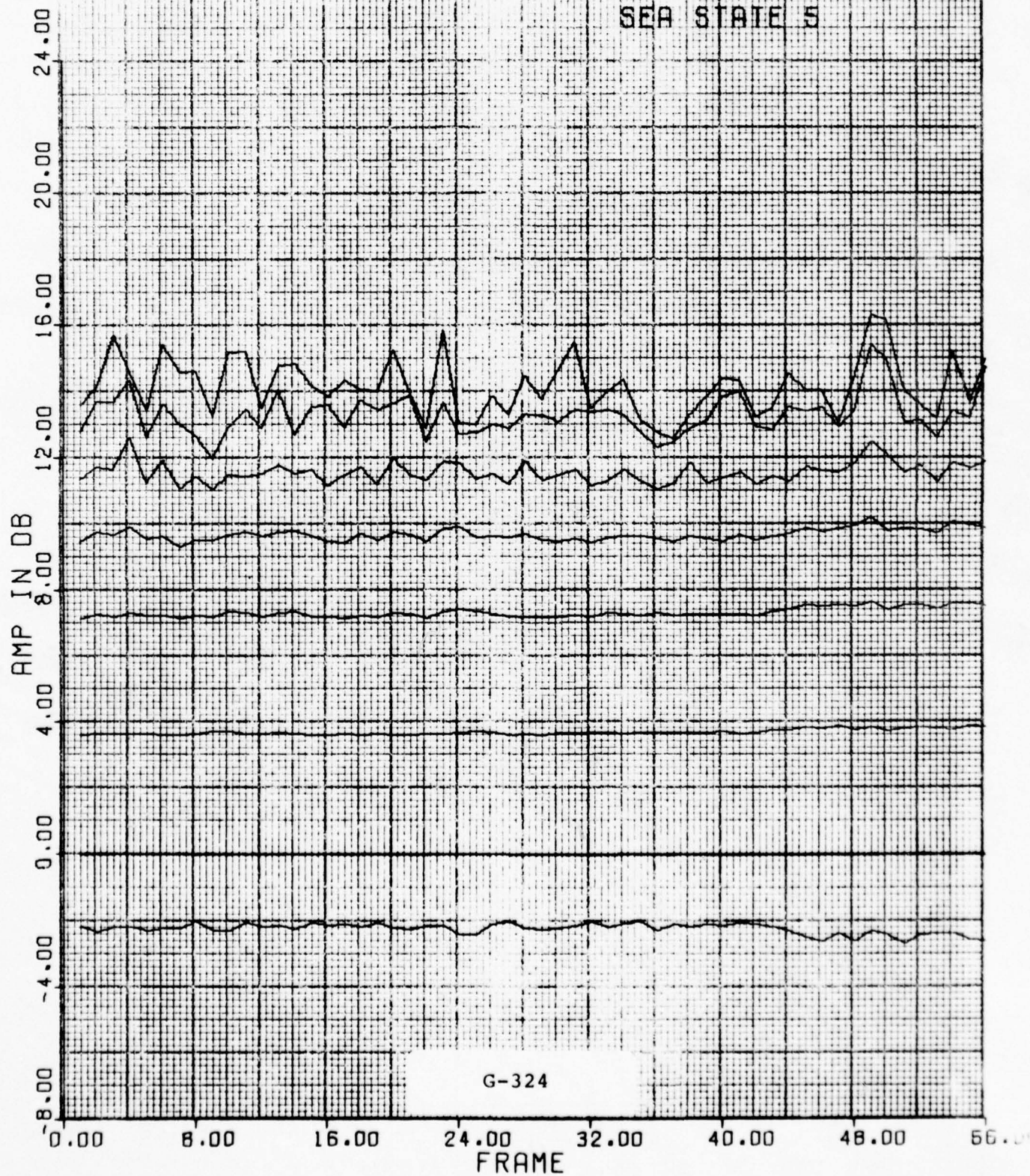
NORMALIZED

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



FR STATS

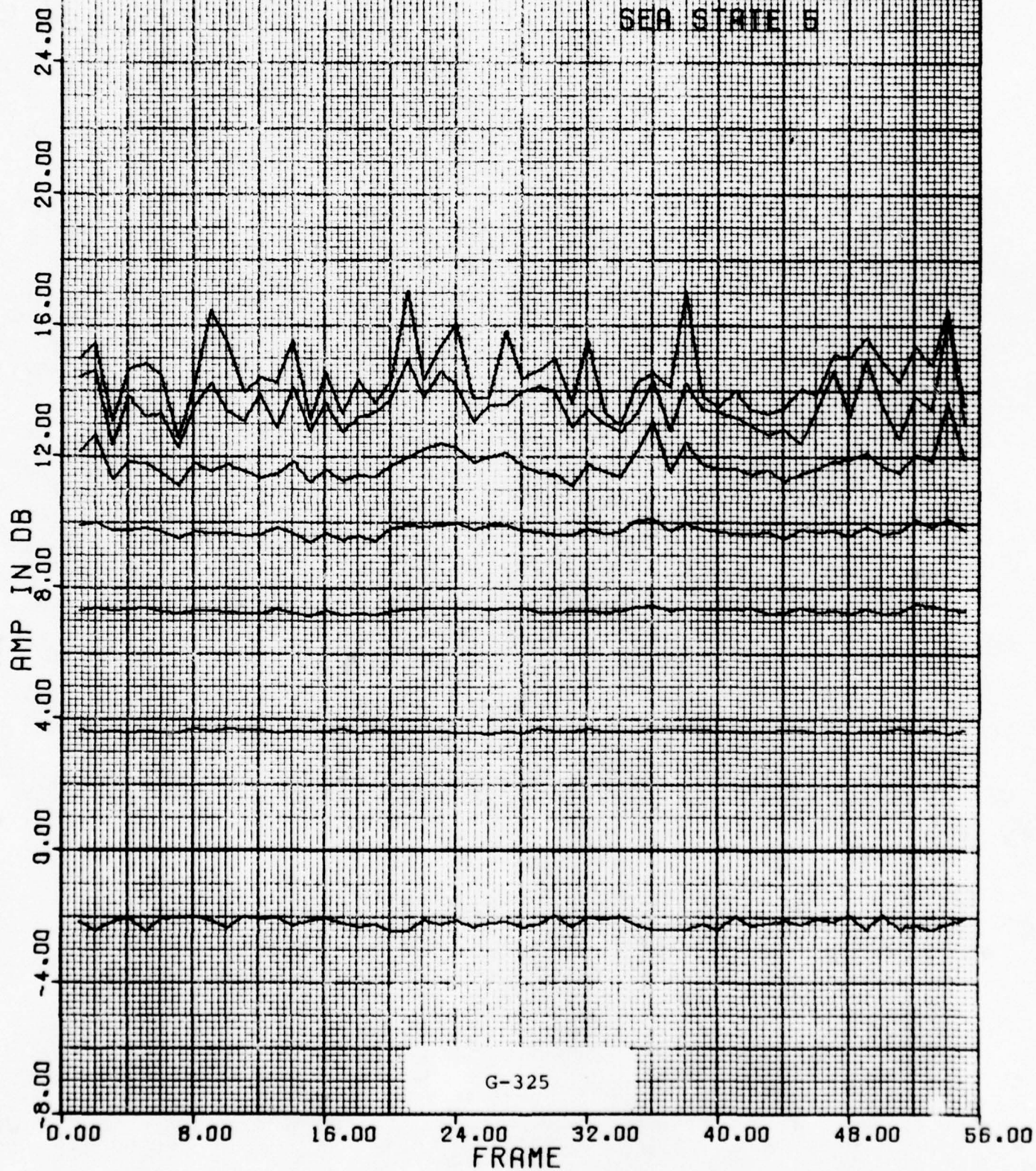
NORMALIZED

RUN 8 FLI 7

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 5



ER STATS

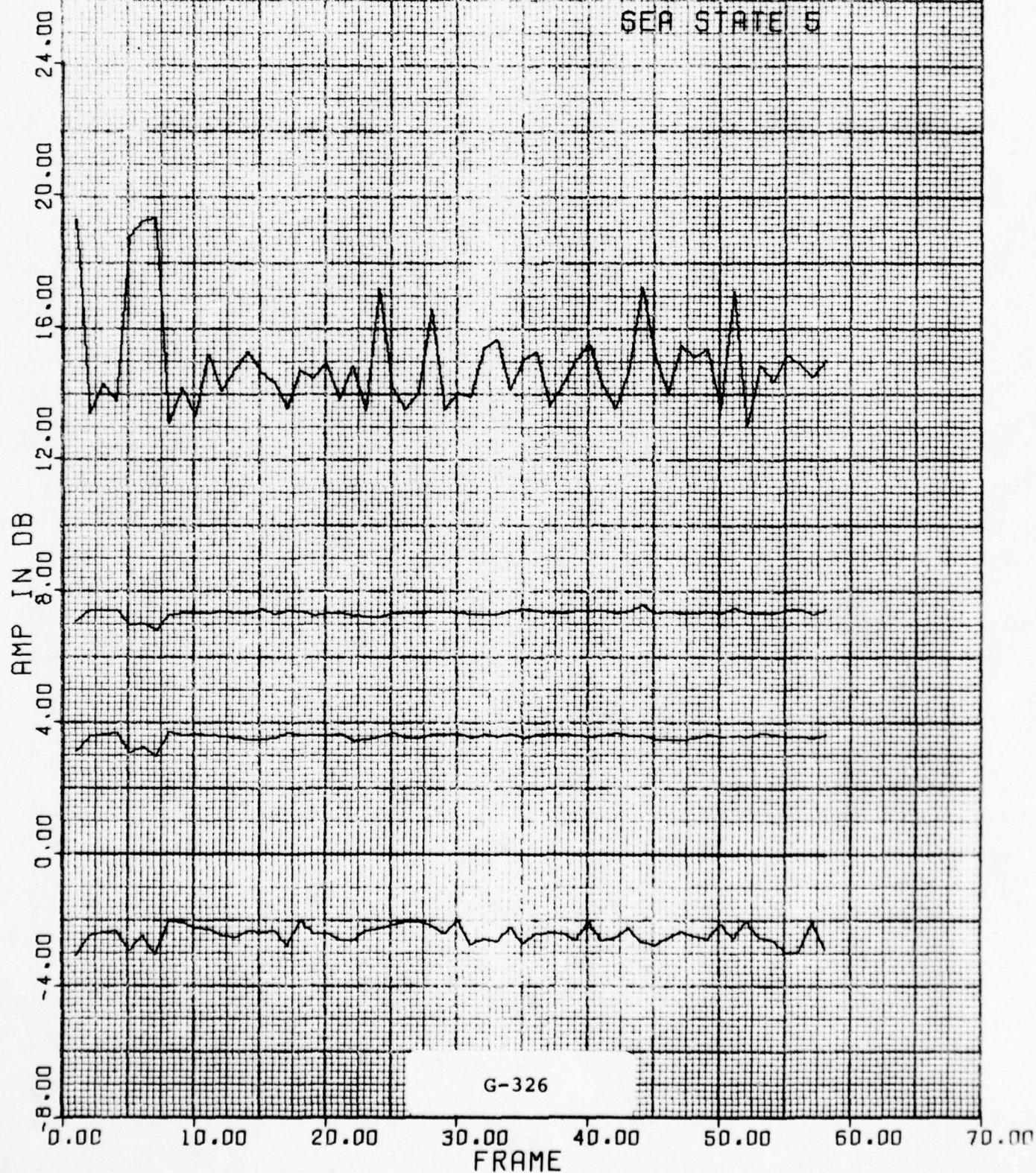
NORMALIZED

RUN 9 FLT 7

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 5



FR STATS

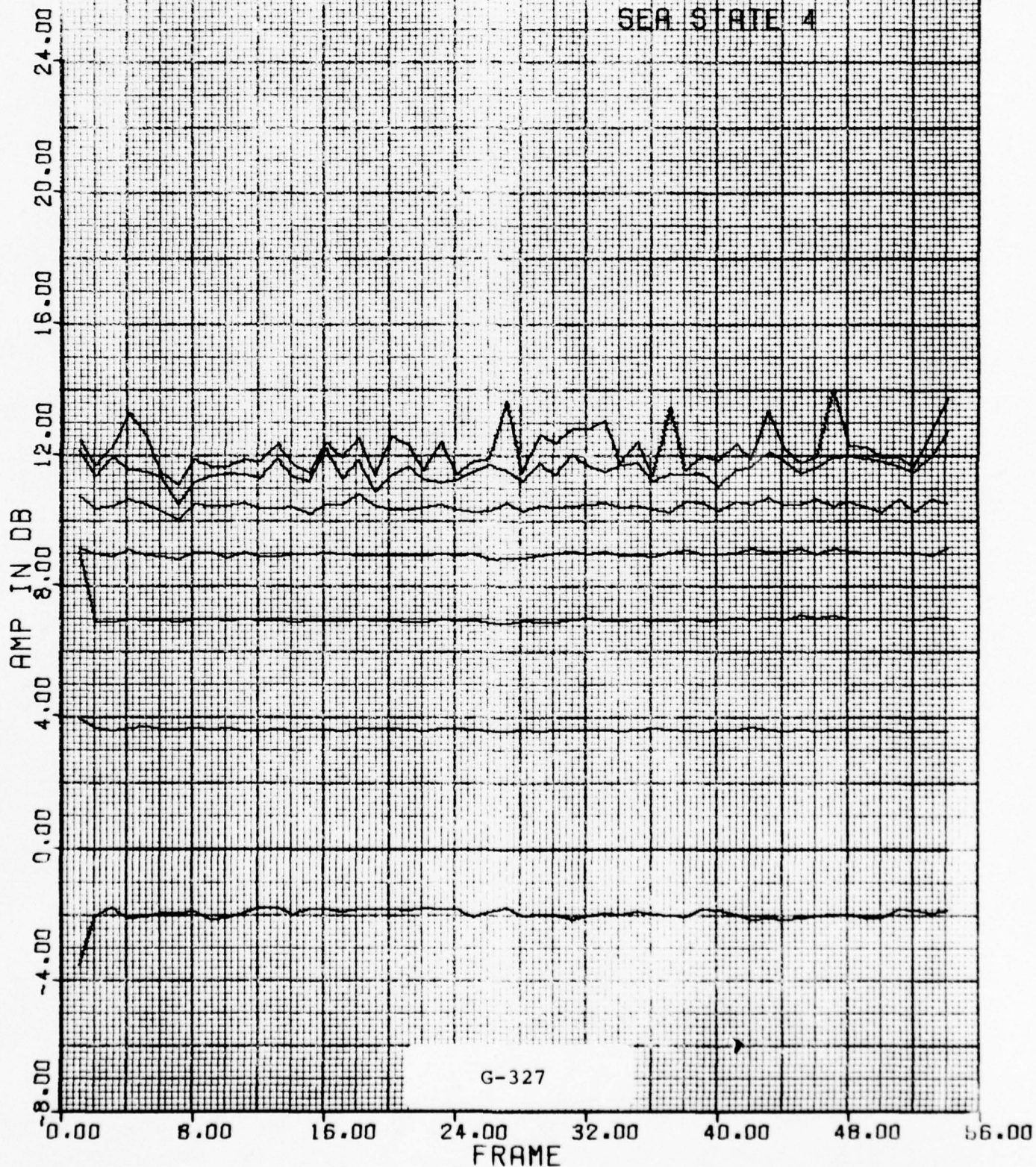
NORMALIZED

RUN 1 F/T B

ALT (KFT) 0.5

UP-WIND

SEA STATE 4



FR STATS

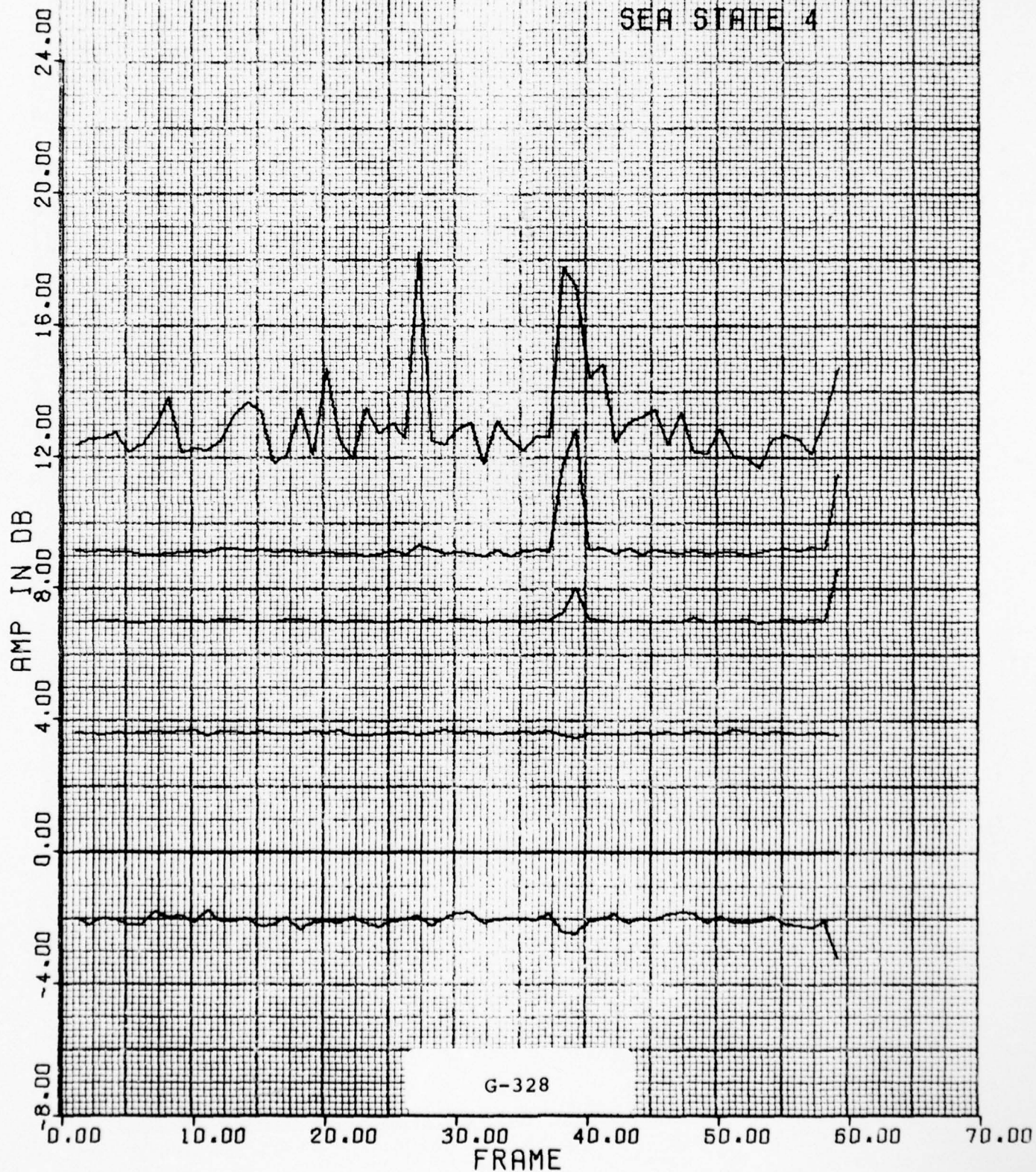
NORMALIZED

RUN 2 FLT 8

ALT (KFT) 0.5

DOWN-WIND

SEA STATE 4



FR STATS

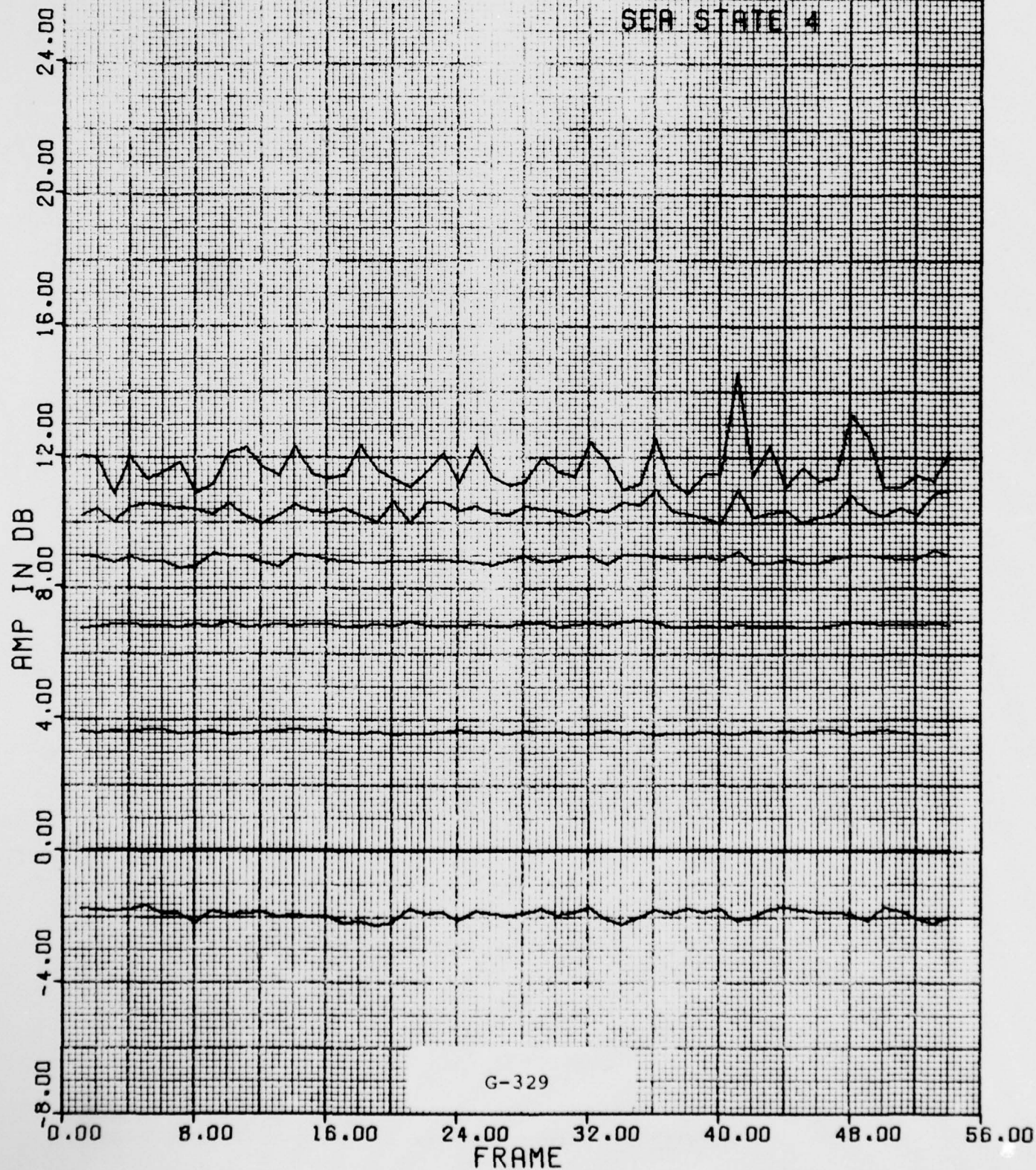
NORMALIZED

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



FR STATS

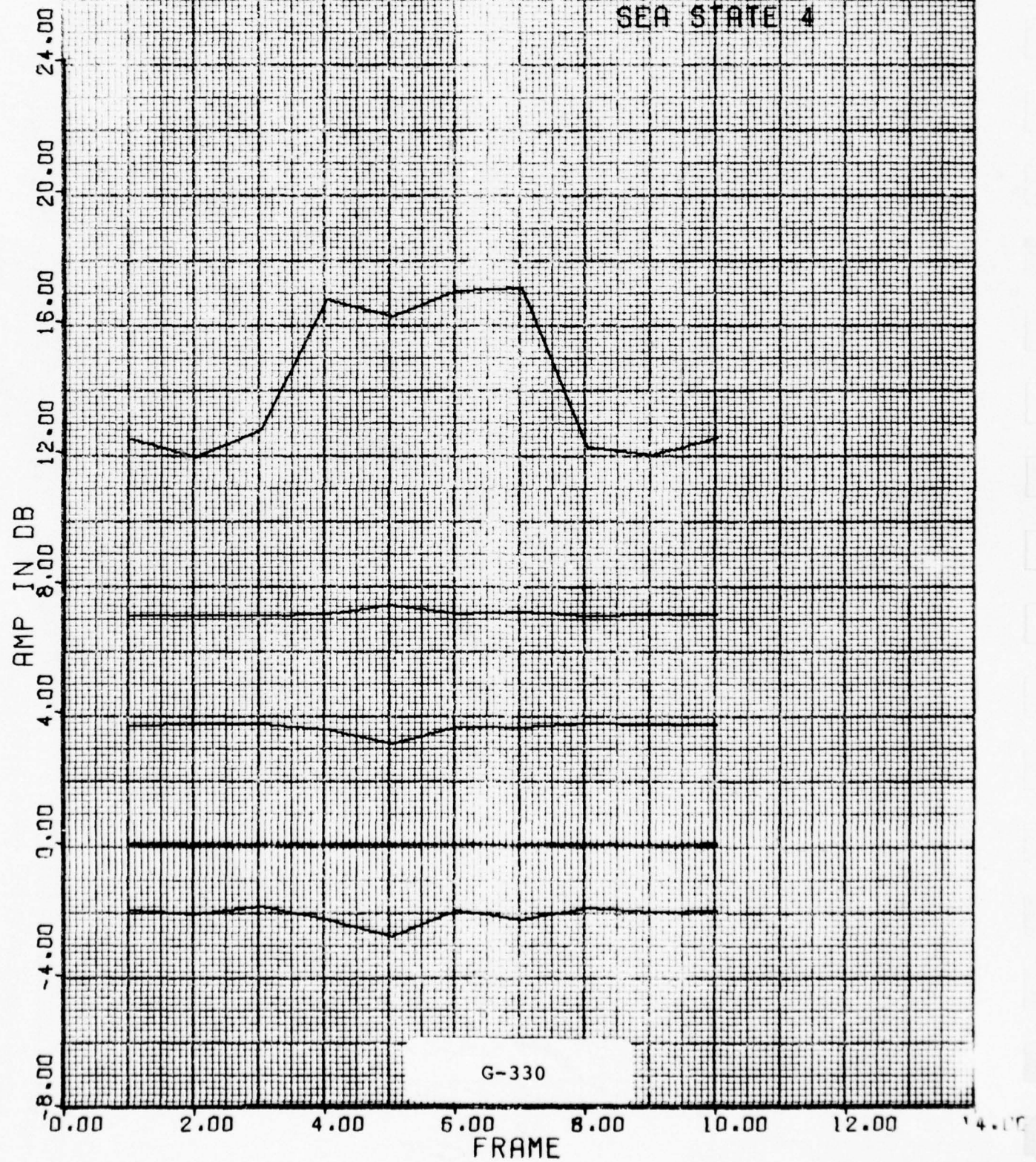
NORMALIZED

RUN 12 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



G-330

FR STATS

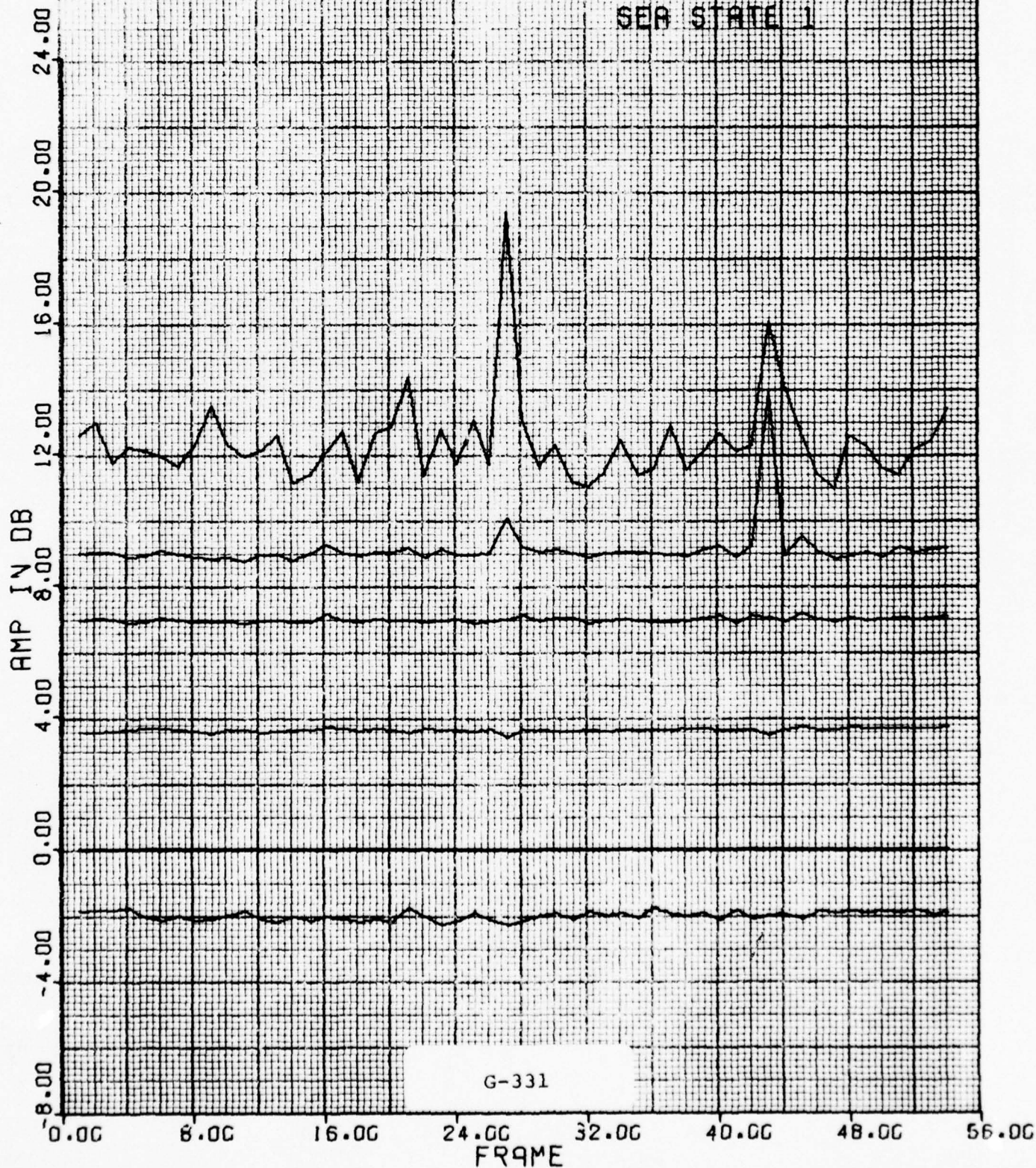
NORMALIZED

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1



FR STATS

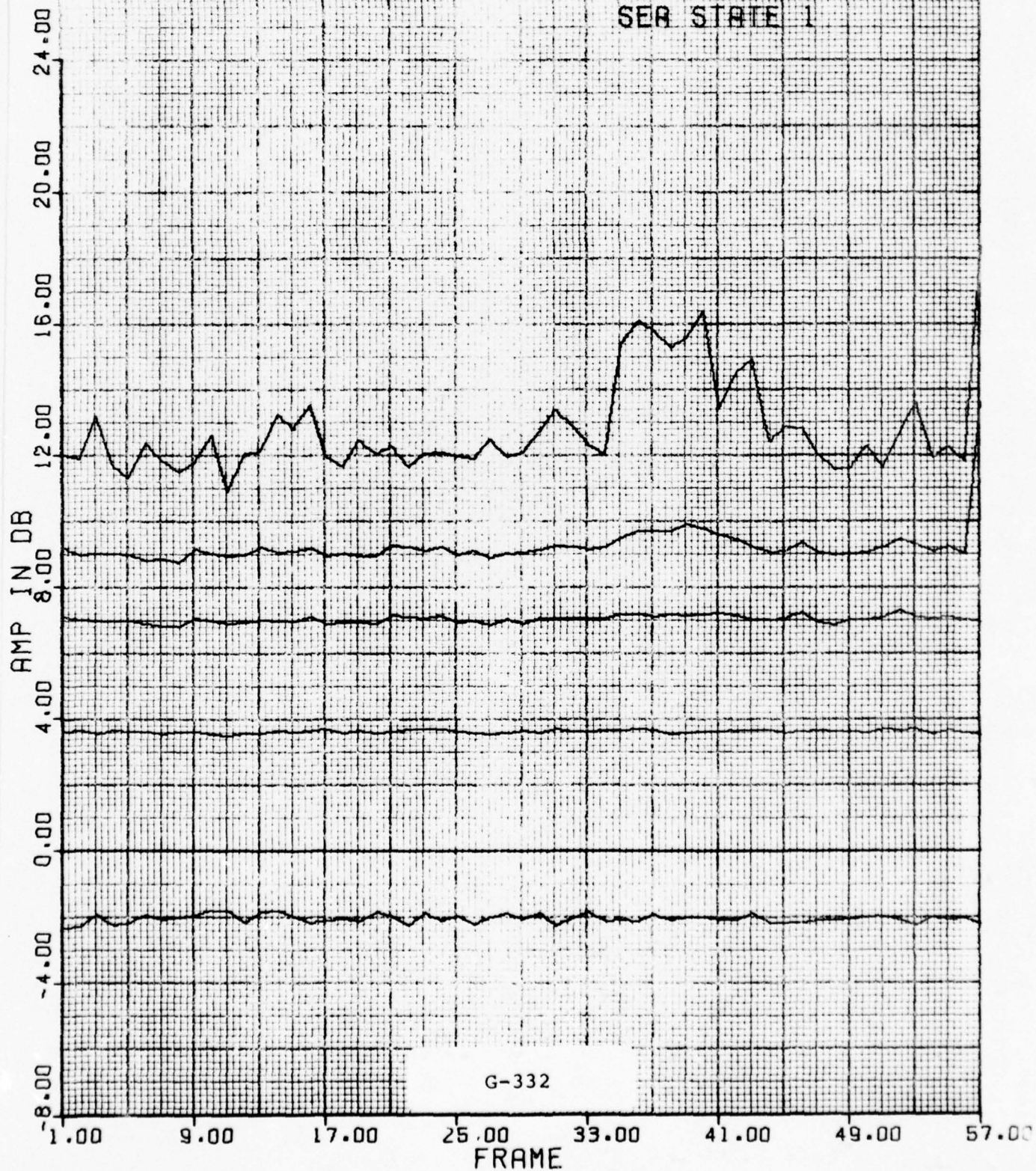
NORMALIZED

RUN 5 FLT 11

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 1



FR STATS

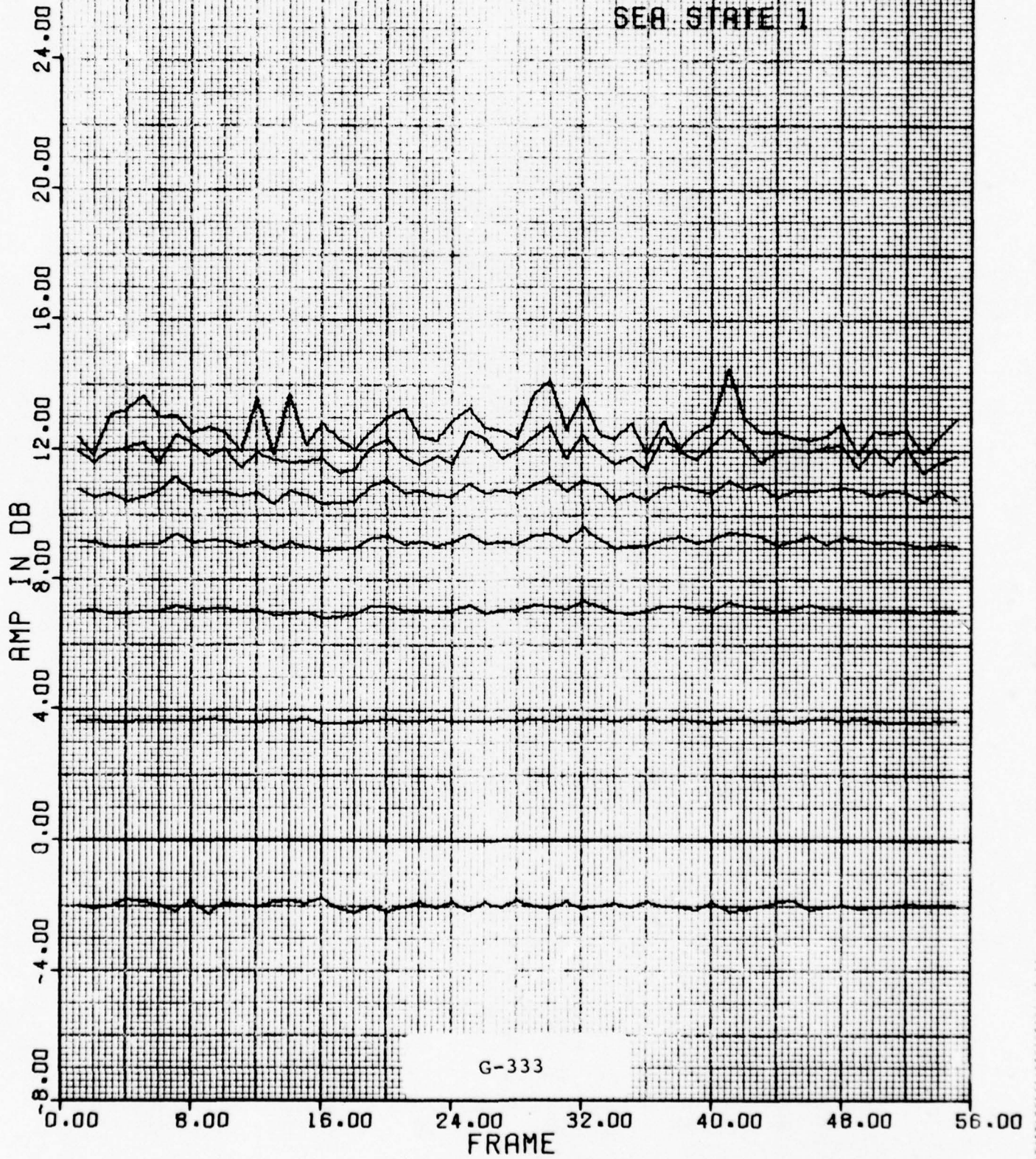
NORMALIZED

RUN 7 FLT 11

ALT (KFT) 3.3

UP-WIND

SEA STATE 1



FR STATS

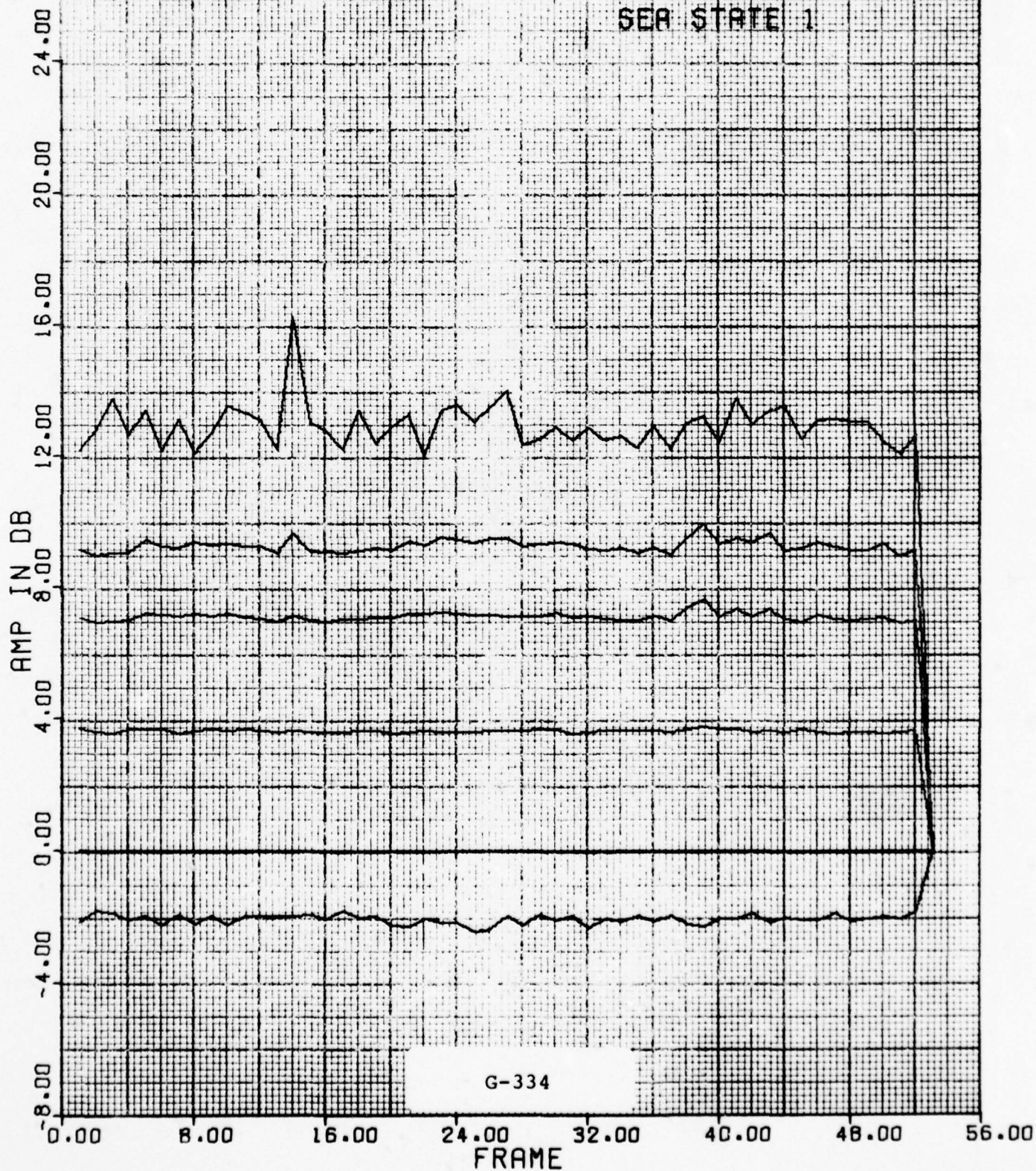
NORMALIZED

RUN 8 FLT 11

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 1



FR STATS

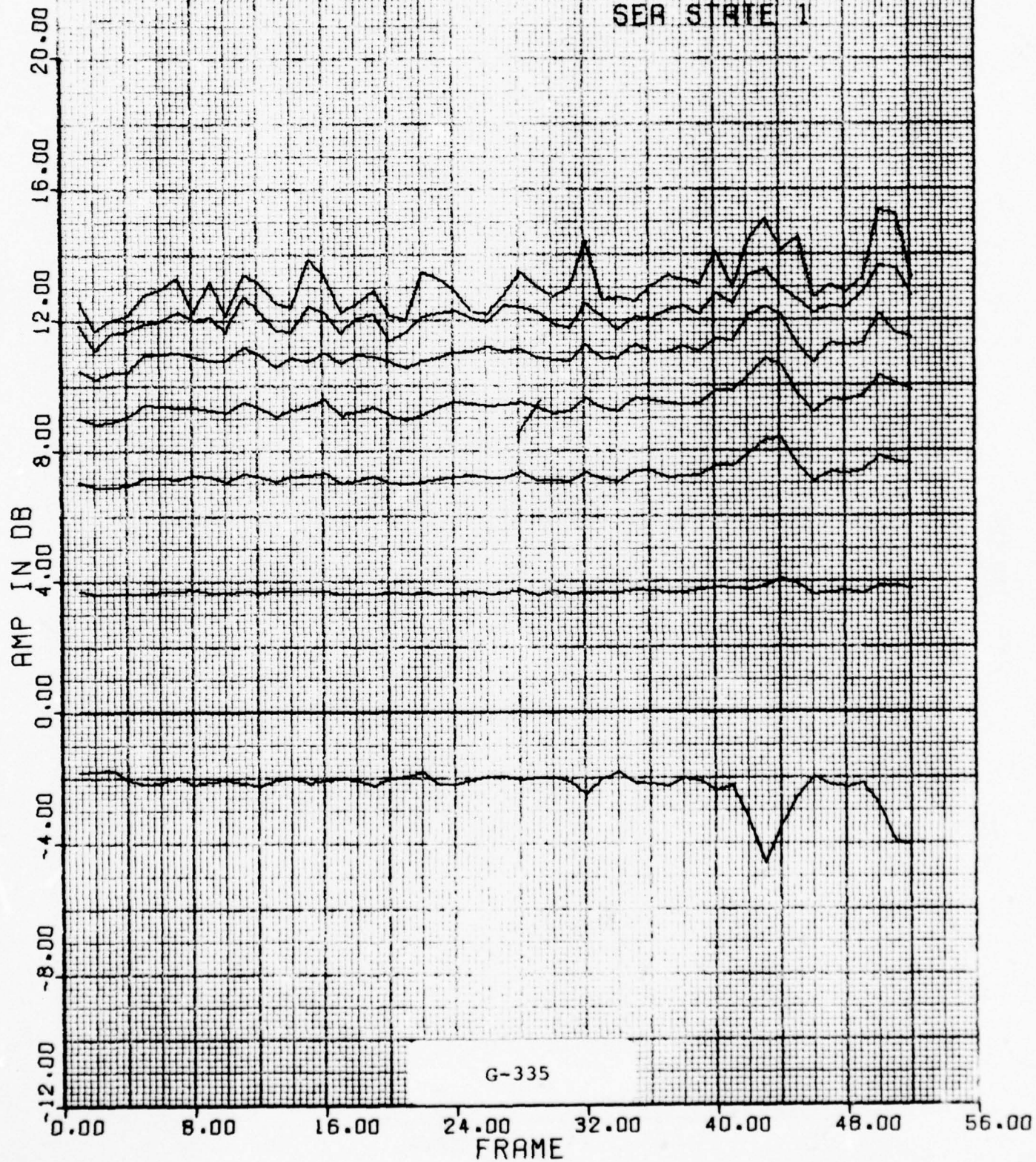
NORMALIZED

RUN 9 FLT 11

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 1



FR STATS

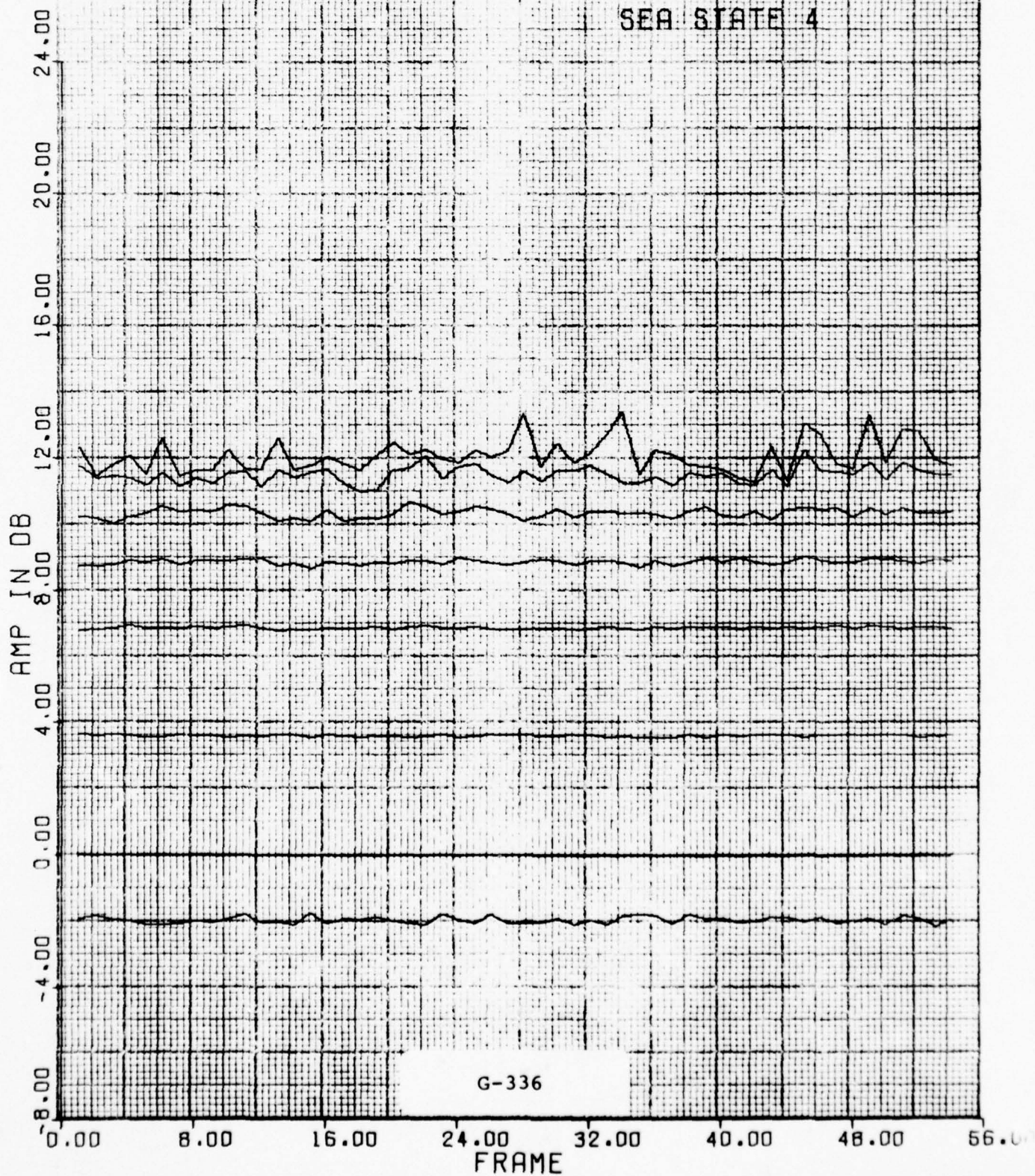
NORMALIZED

RUN 1 FLT 16

ALT (KFT) 1.1

UP-WIND

SEA STATE 4



FR STATS

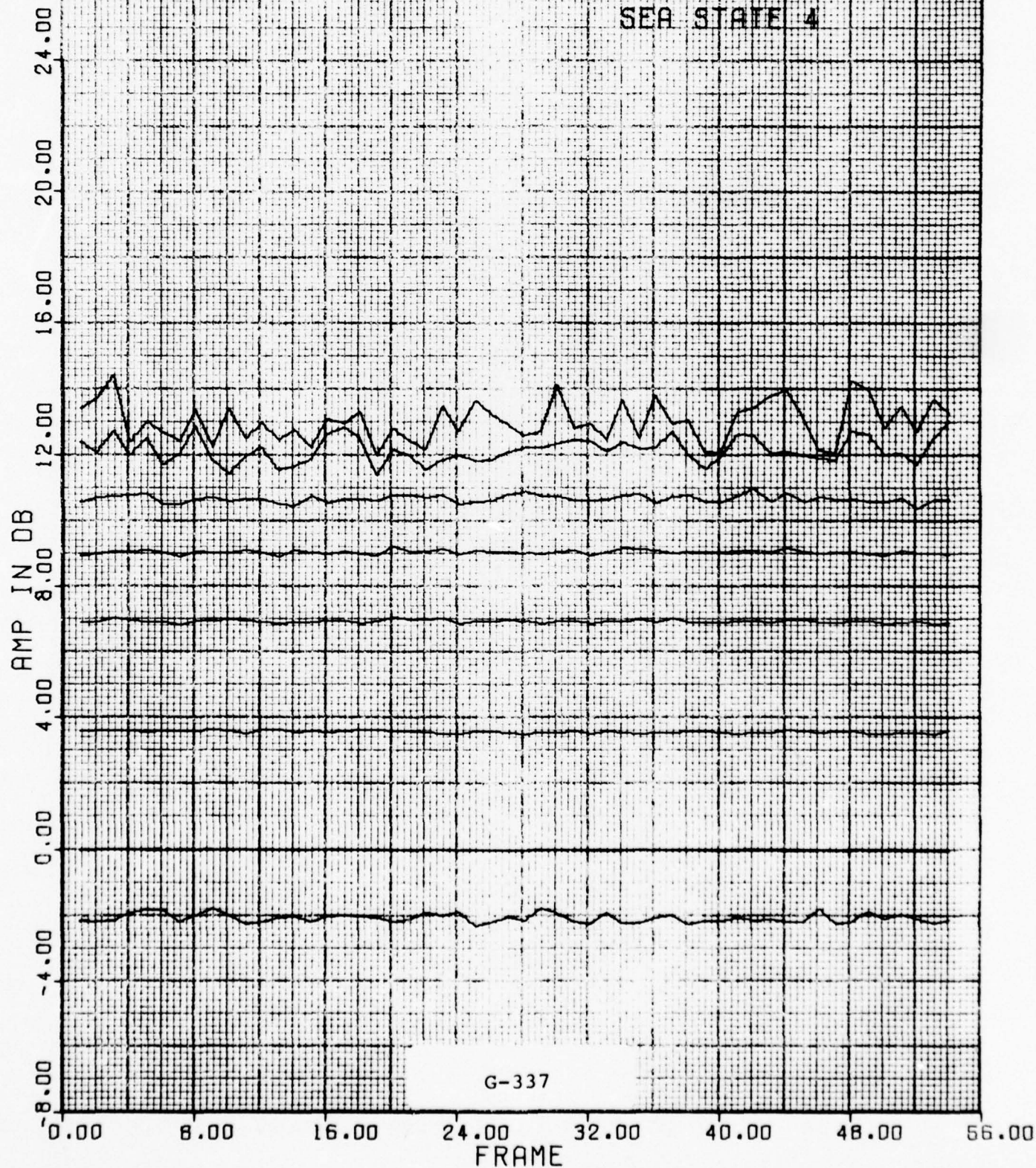
NORMALIZED

RUN 2 FLI 15

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



FR STATS

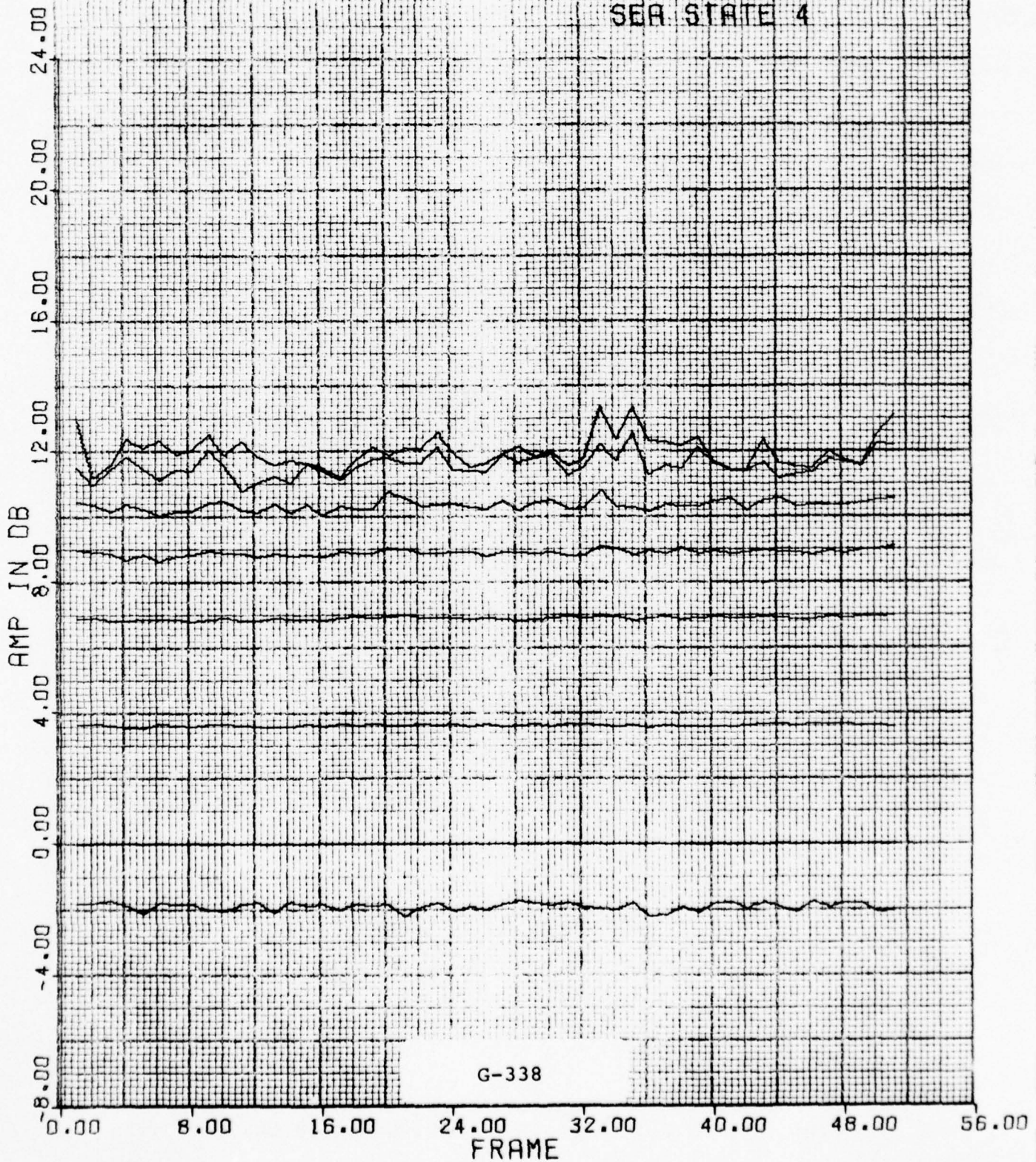
NORMALIZED

RUN 3 FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4



FR STATS

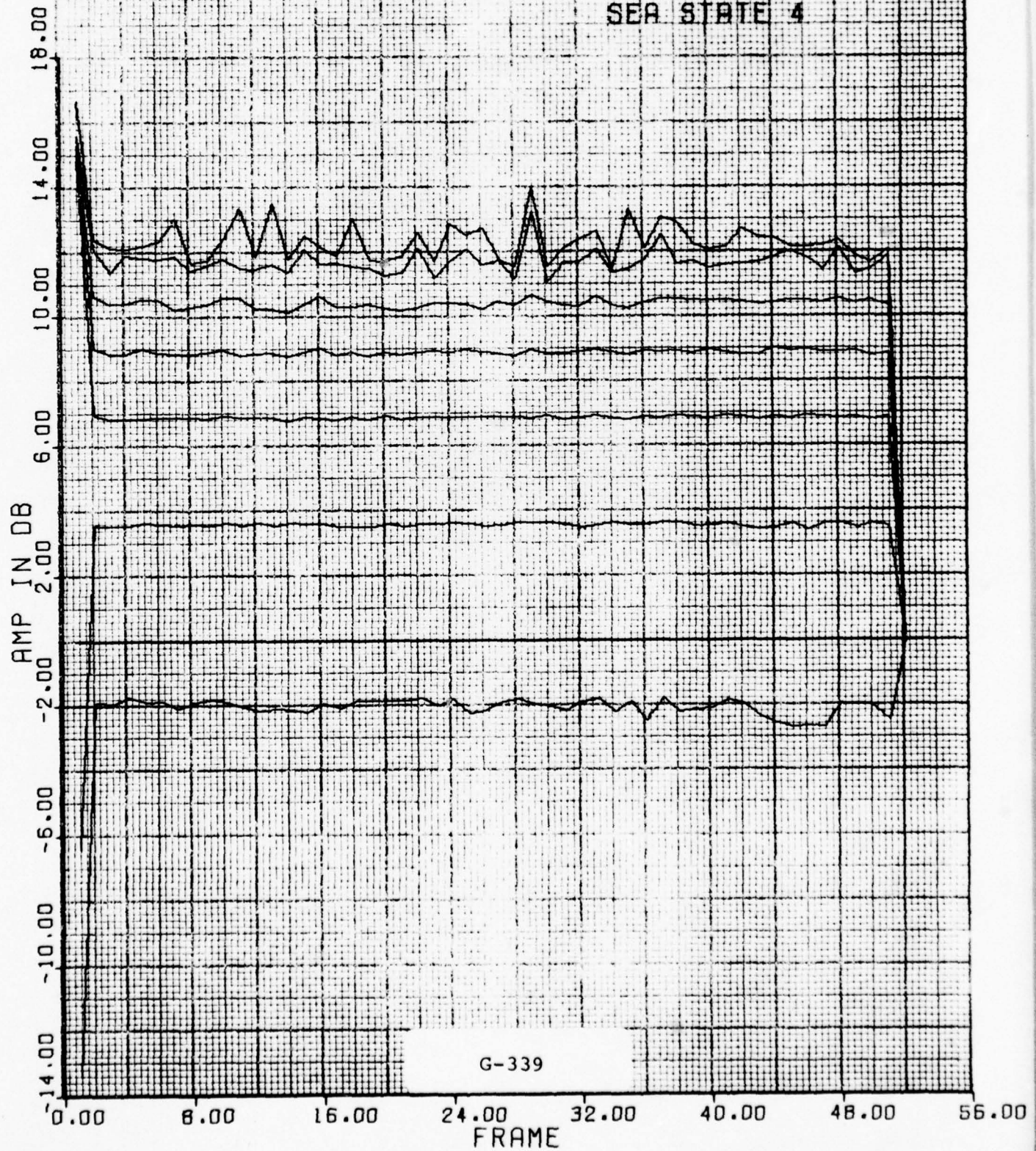
NORMALIZED

RUN 5 FLI 16

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4



FR STATS

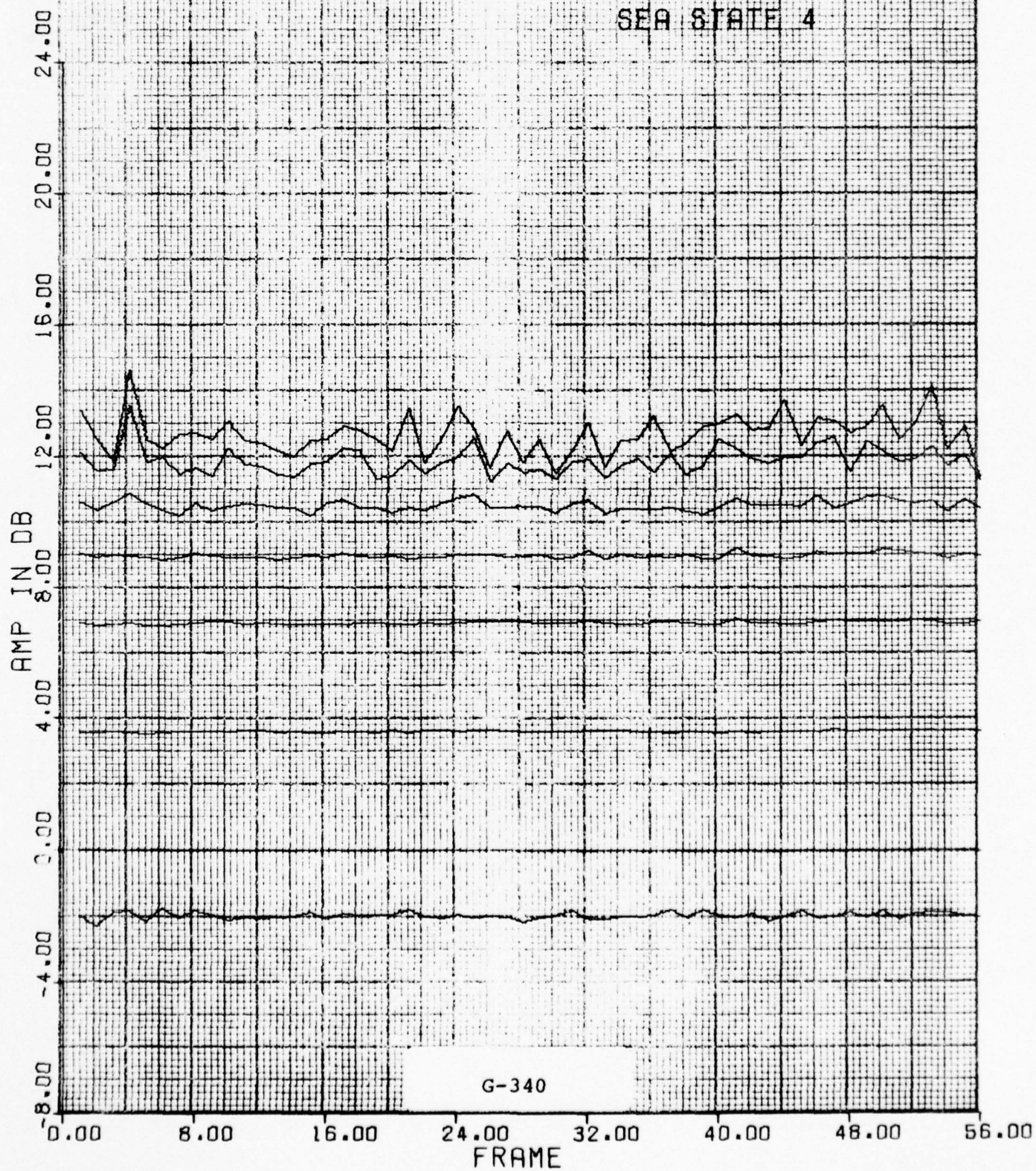
NORMALIZED

RUN 6 FLT 18

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



FR STATS

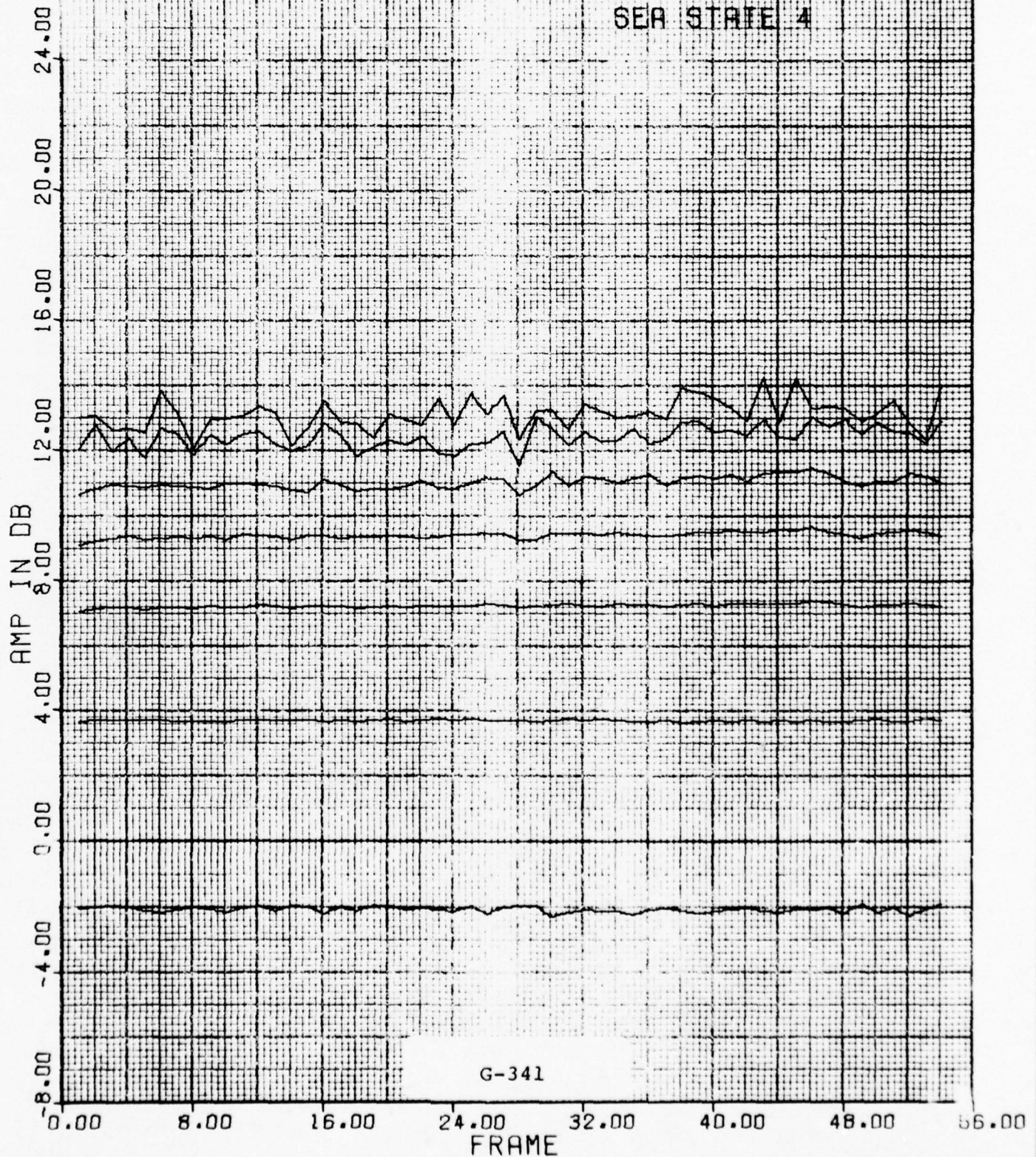
NORMALIZED

RUN 7 FLT 16

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



FR STATS

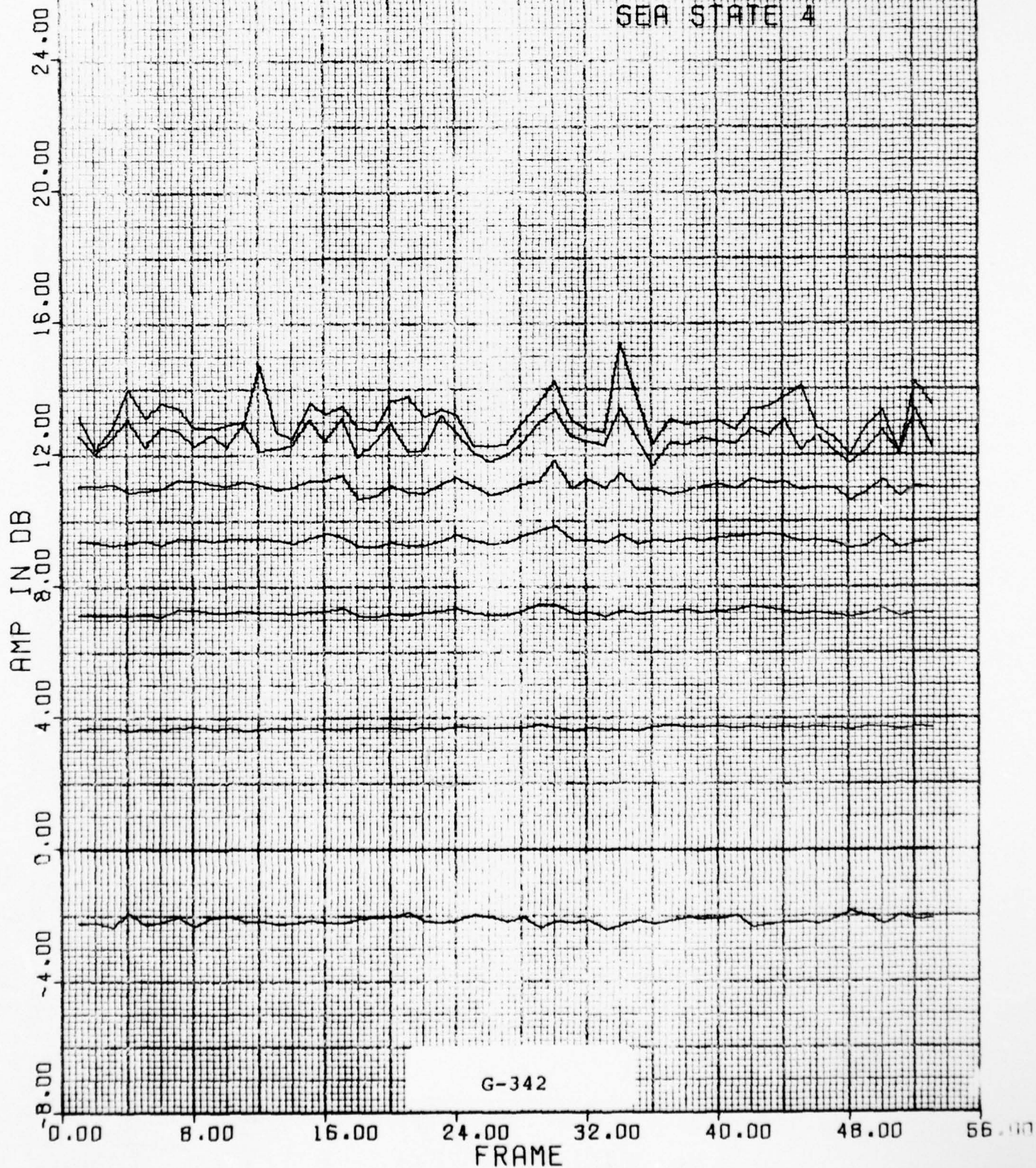
NORMALIZED

RUN 9 FLT 16

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4



FR STATS

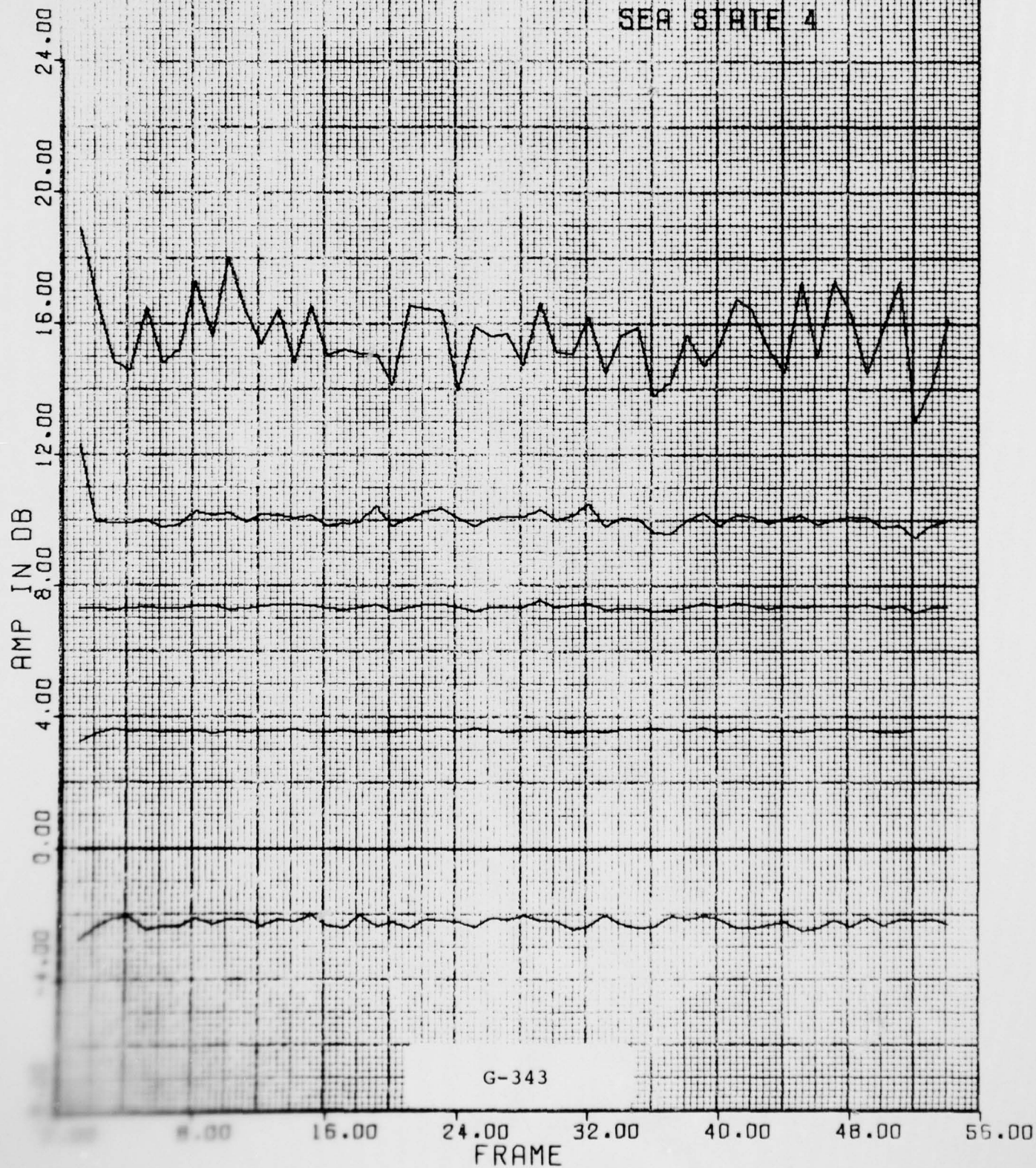
NORMALIZED

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



G-343

FR STATS

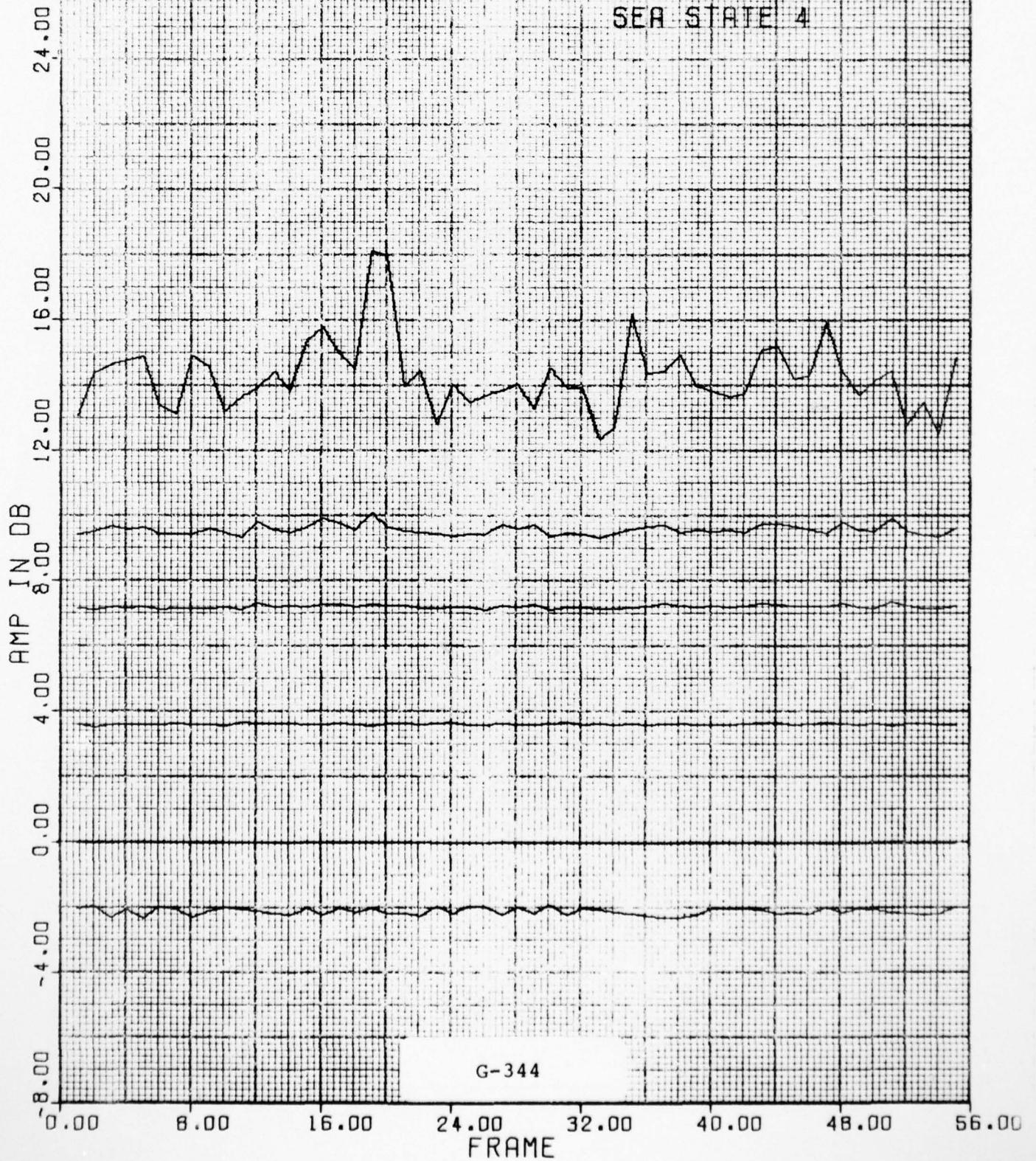
NORMALIZED

RUN 7 FLT 17

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



FR STATS

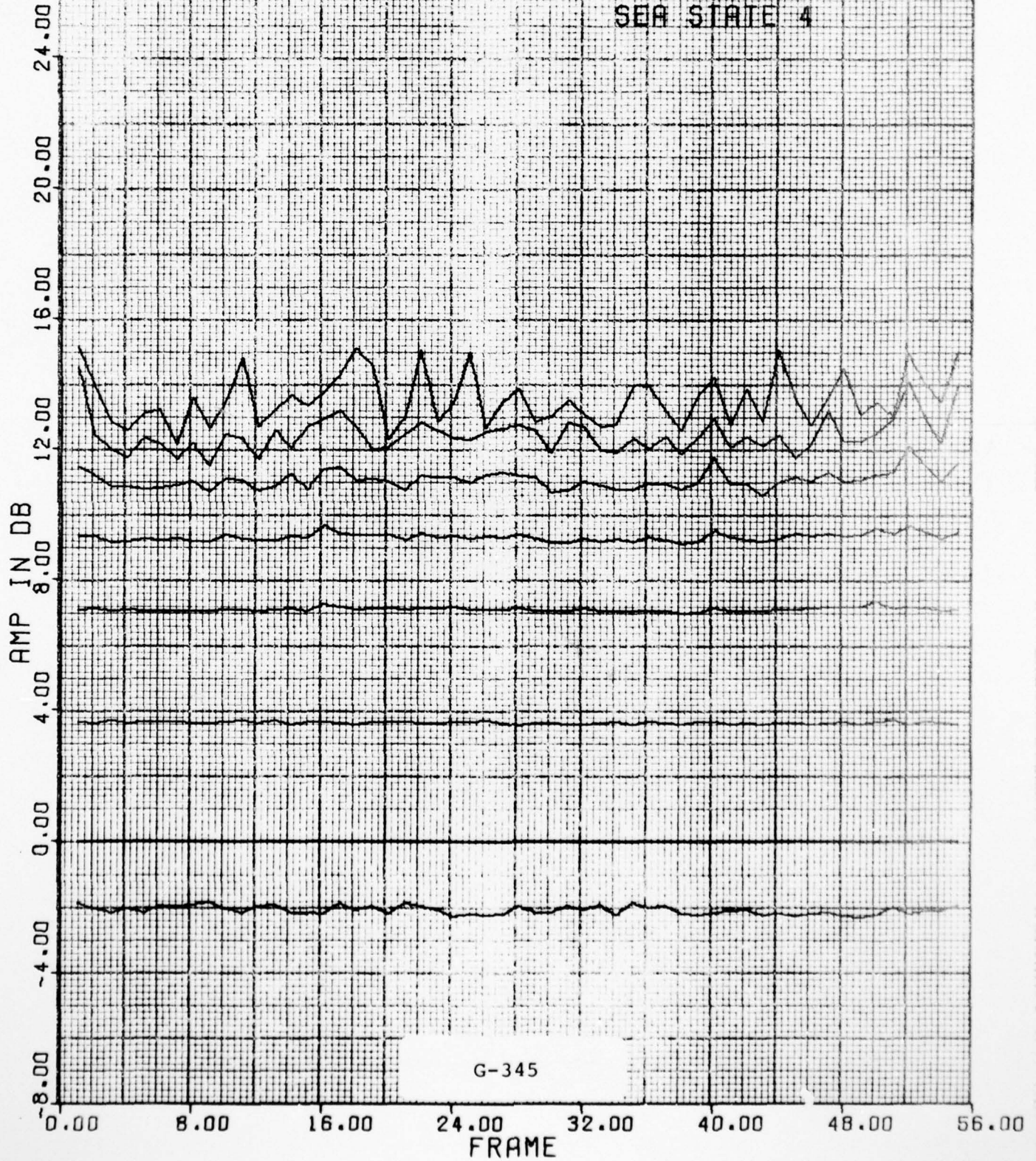
NORMALIZED

RUN 8 FLT 17

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4



UNCLASSIFIED

1.3.3 Statistics versus Range Gate

These plots show a selection of statistical parameters as they vary between range gates. Theoretically known biases have been removed. The following statistical parameters are plotted in dB from bottom to top on the plot:

Median

Mean

10^{-1} point on Q curve

10^{-2} point on Q curve

10^{-3} point on Q curve

10^{-4} point on Q curve

10^{-5} point on Q curve (if sufficient data available)

Maximum Value

The horizontal axis is range gate numbered from 0 thru 15.

RG STATS

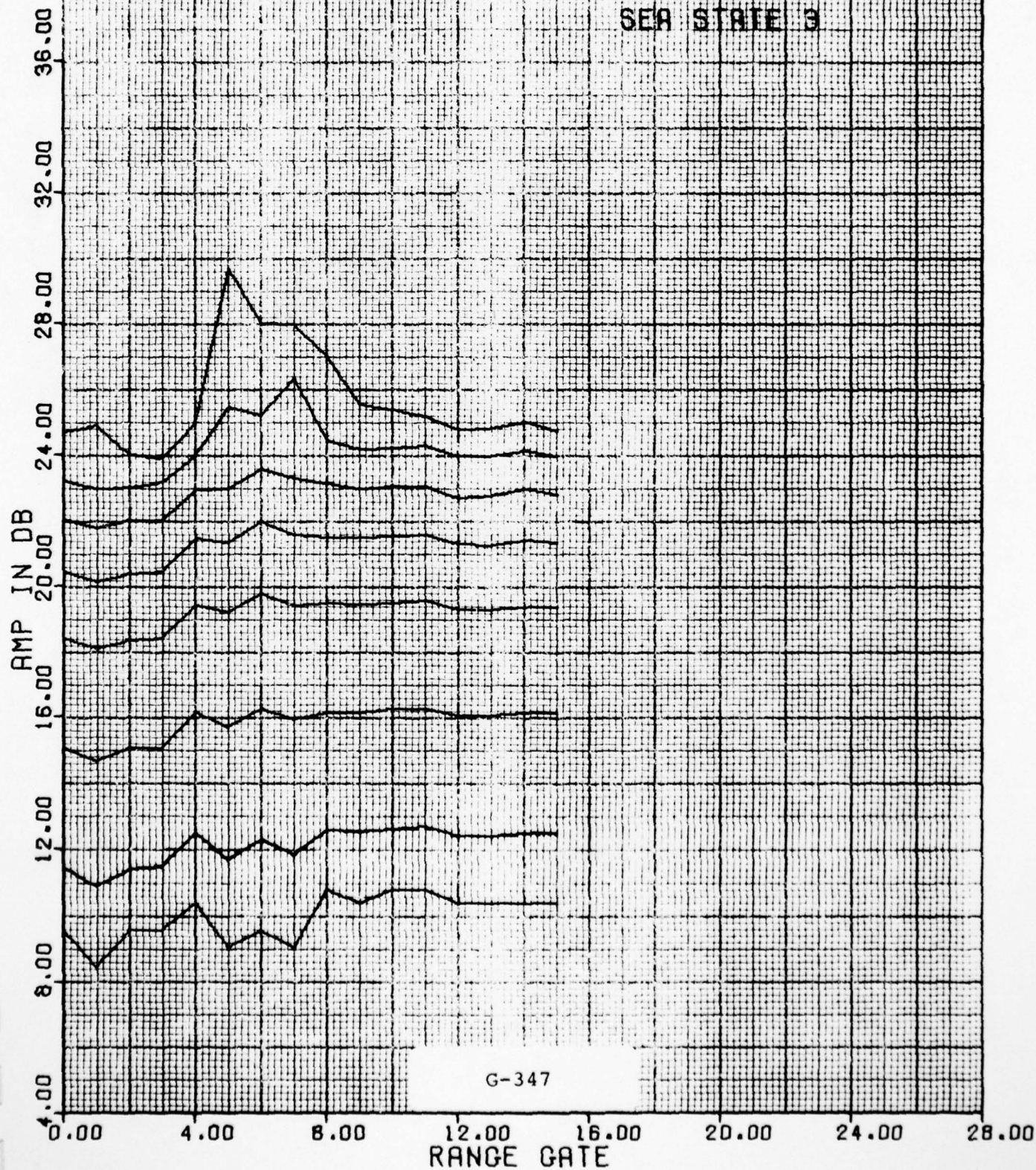
ABSOLUTE

RUN 1 FLT 4

ALT (KFT) 1.1

UP-WIND

SEA STATE 3



RG STATS

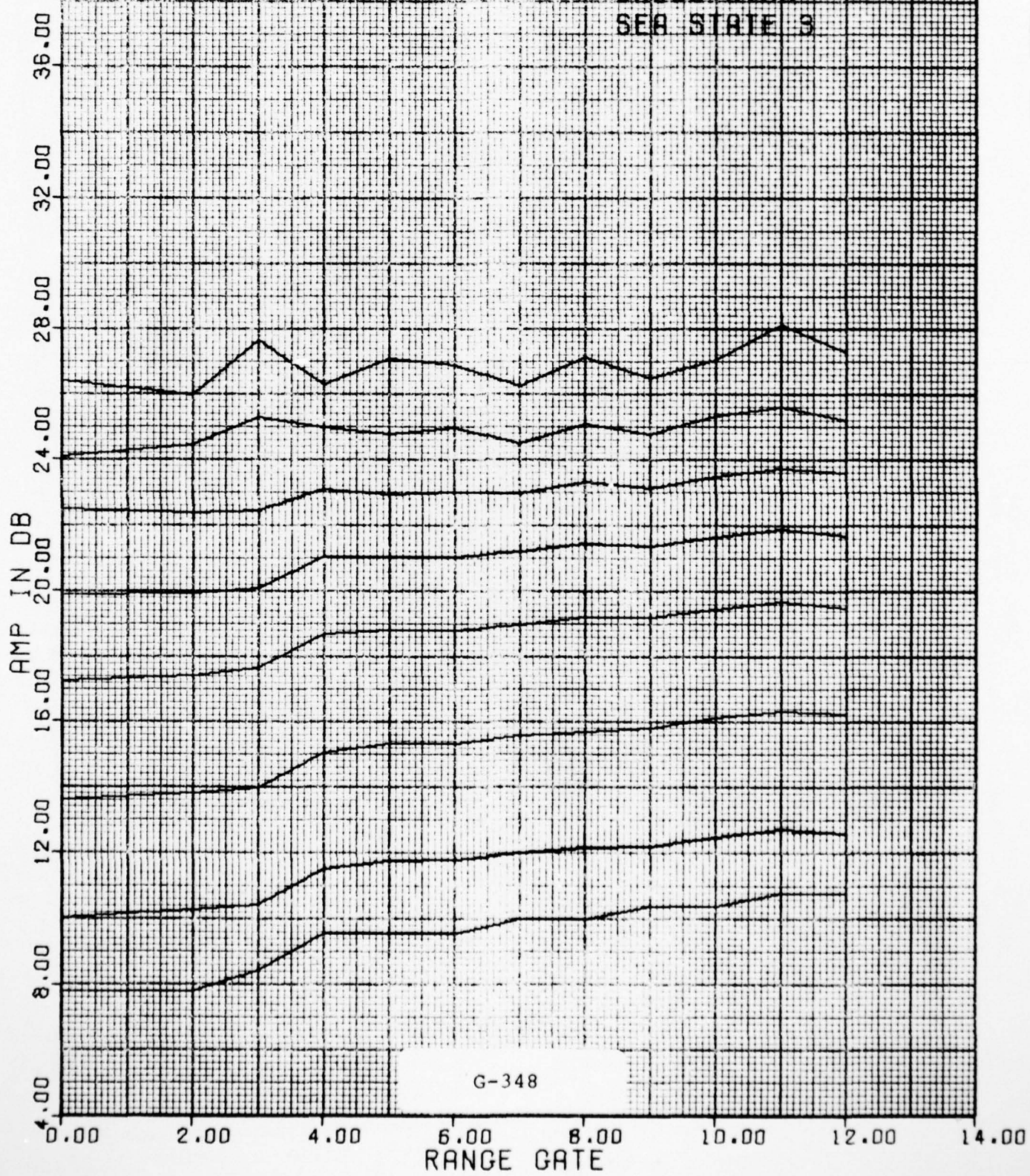
ABSOLUTE

RUN 3 FLT 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



G-348

RG STATS

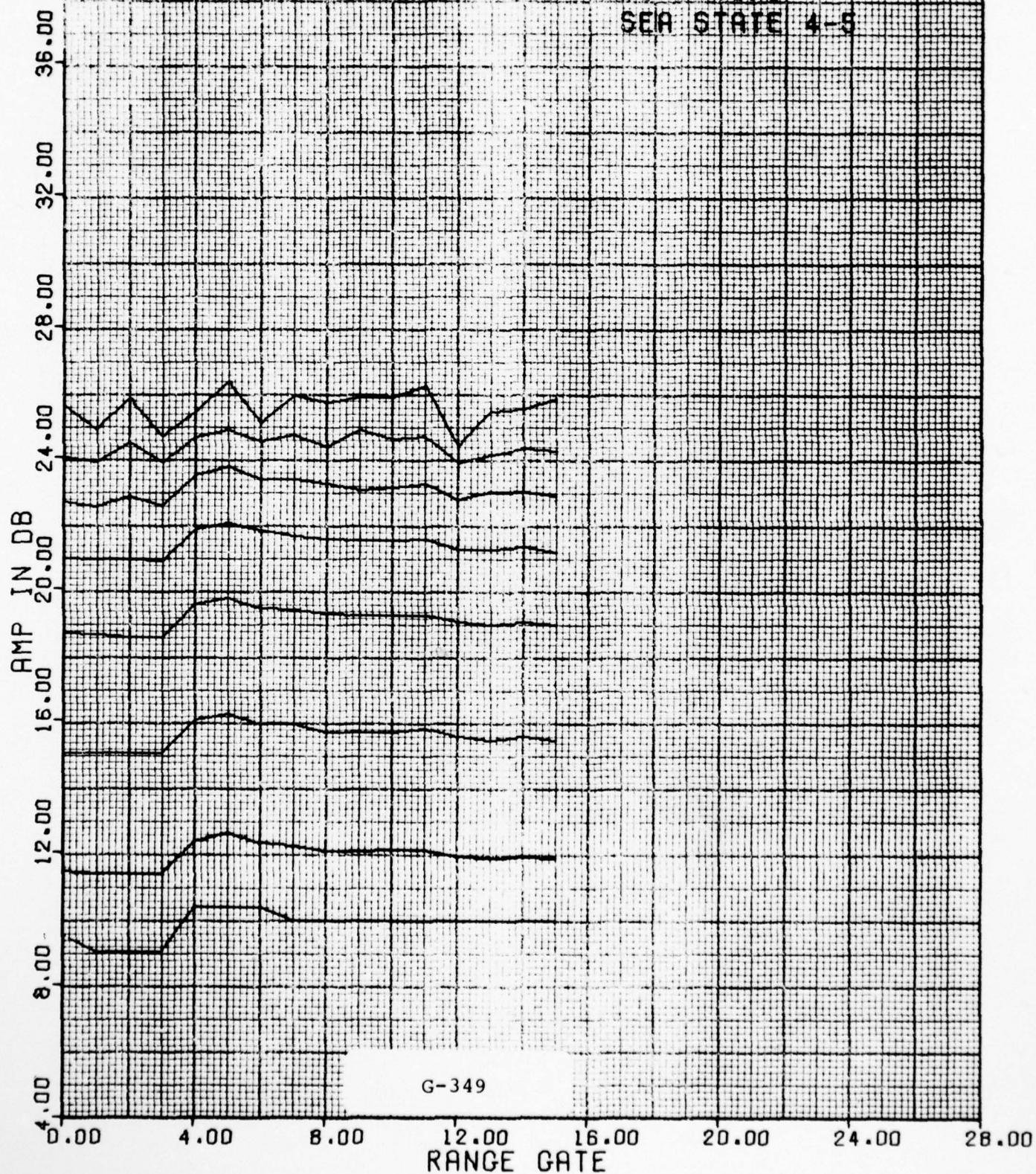
ABSOLUTE

RUN 2 FLT 6

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4-5



RG STATS

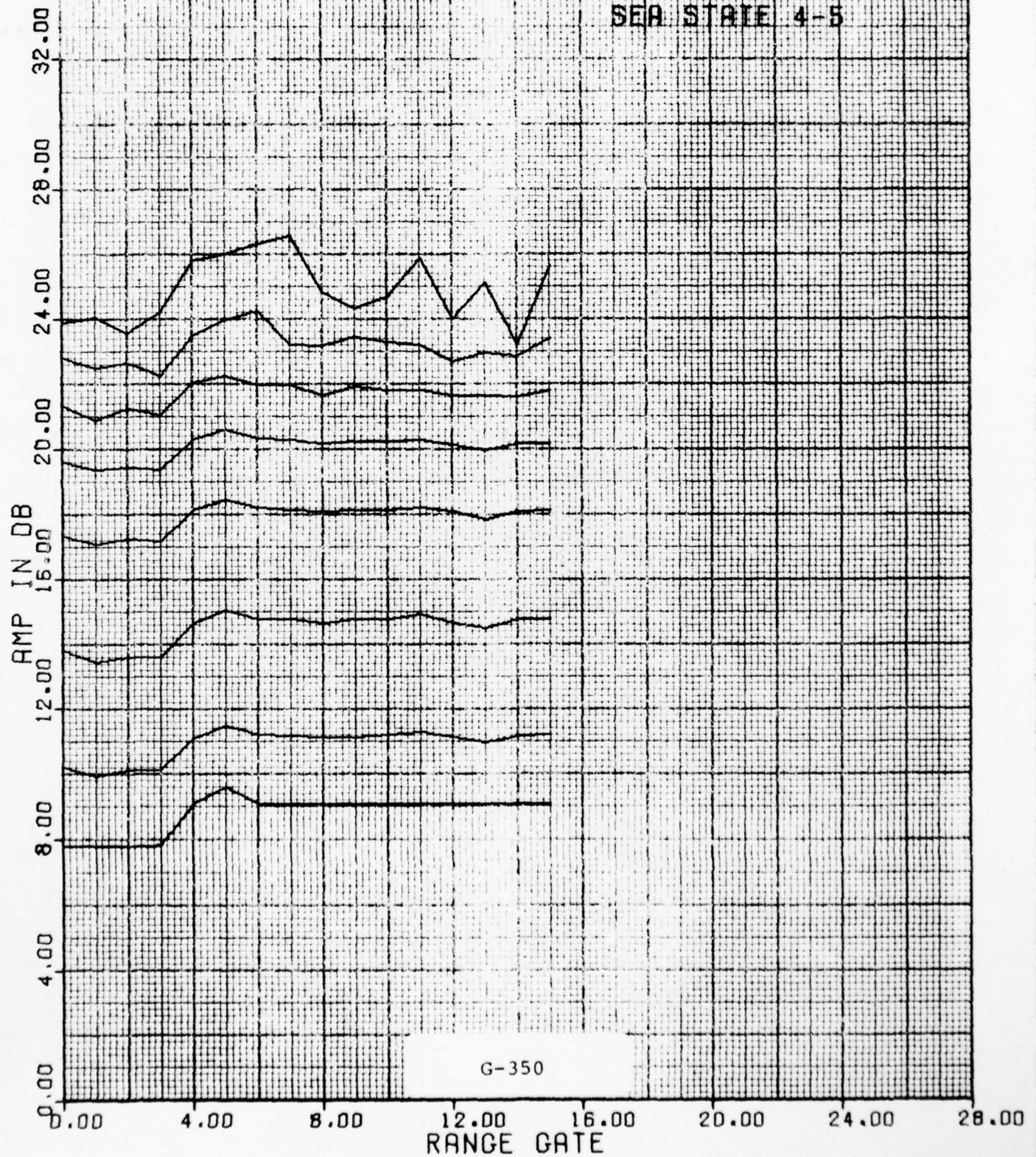
ABSOLUTE

RUN 9 FLT 6

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4-5



RG STATS

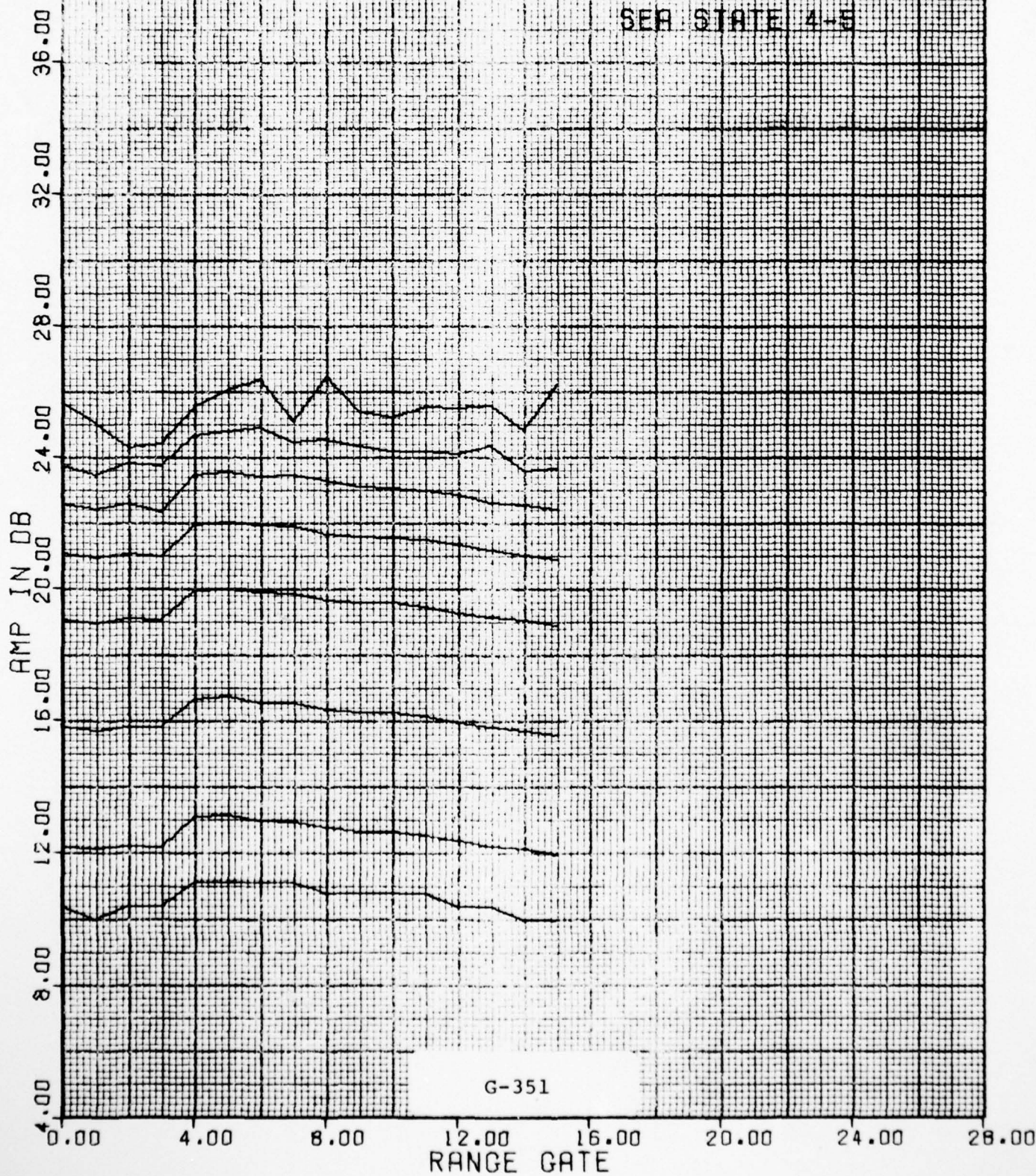
ABSOLUTE

RUN 4 FLT 6

ALT (KFT) 2.2

UP-WIND

SEA STATE 4-5



G-351

RG STATS

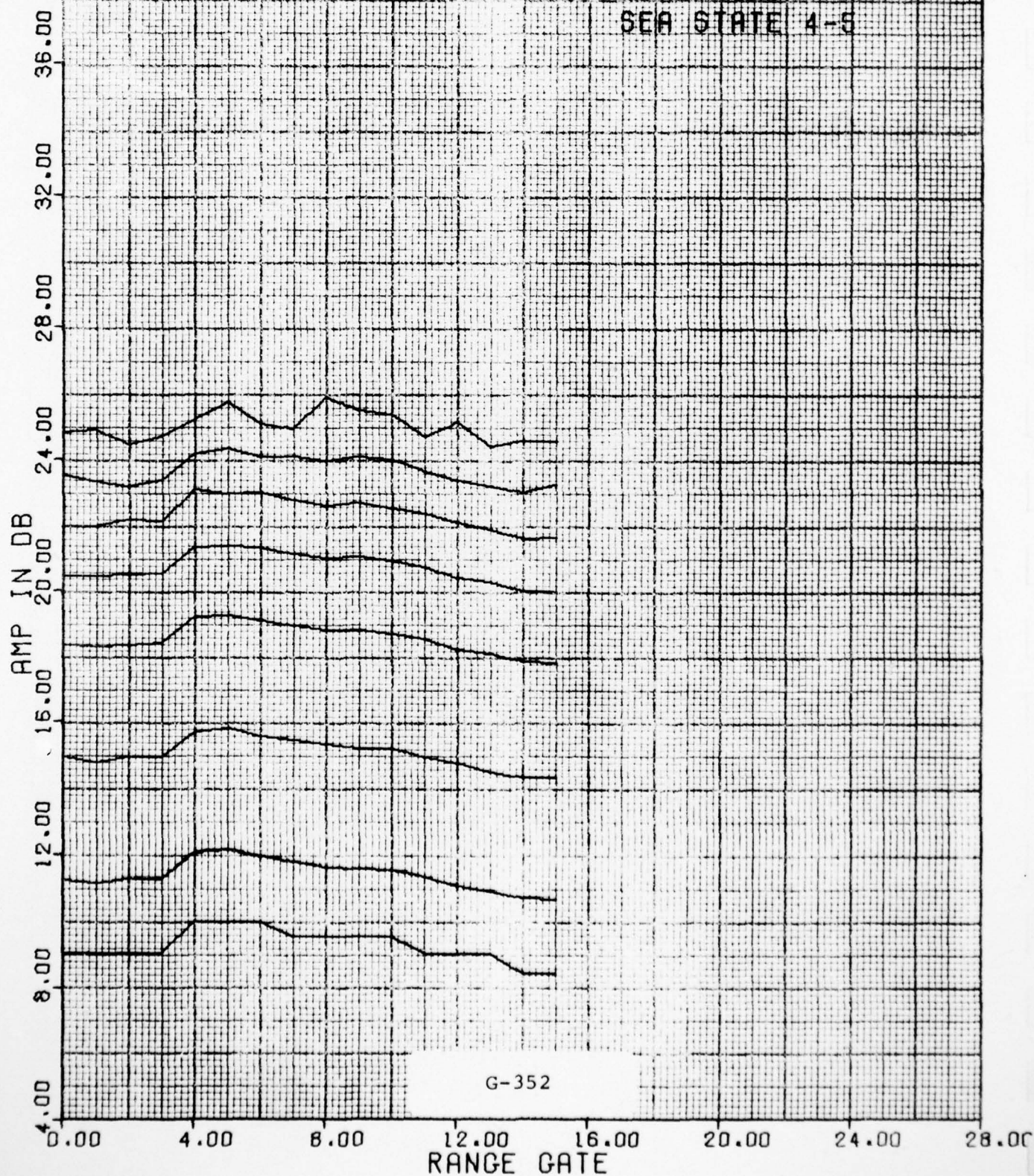
ABSOLUTE

RUN 5 FLI 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



RG STATS

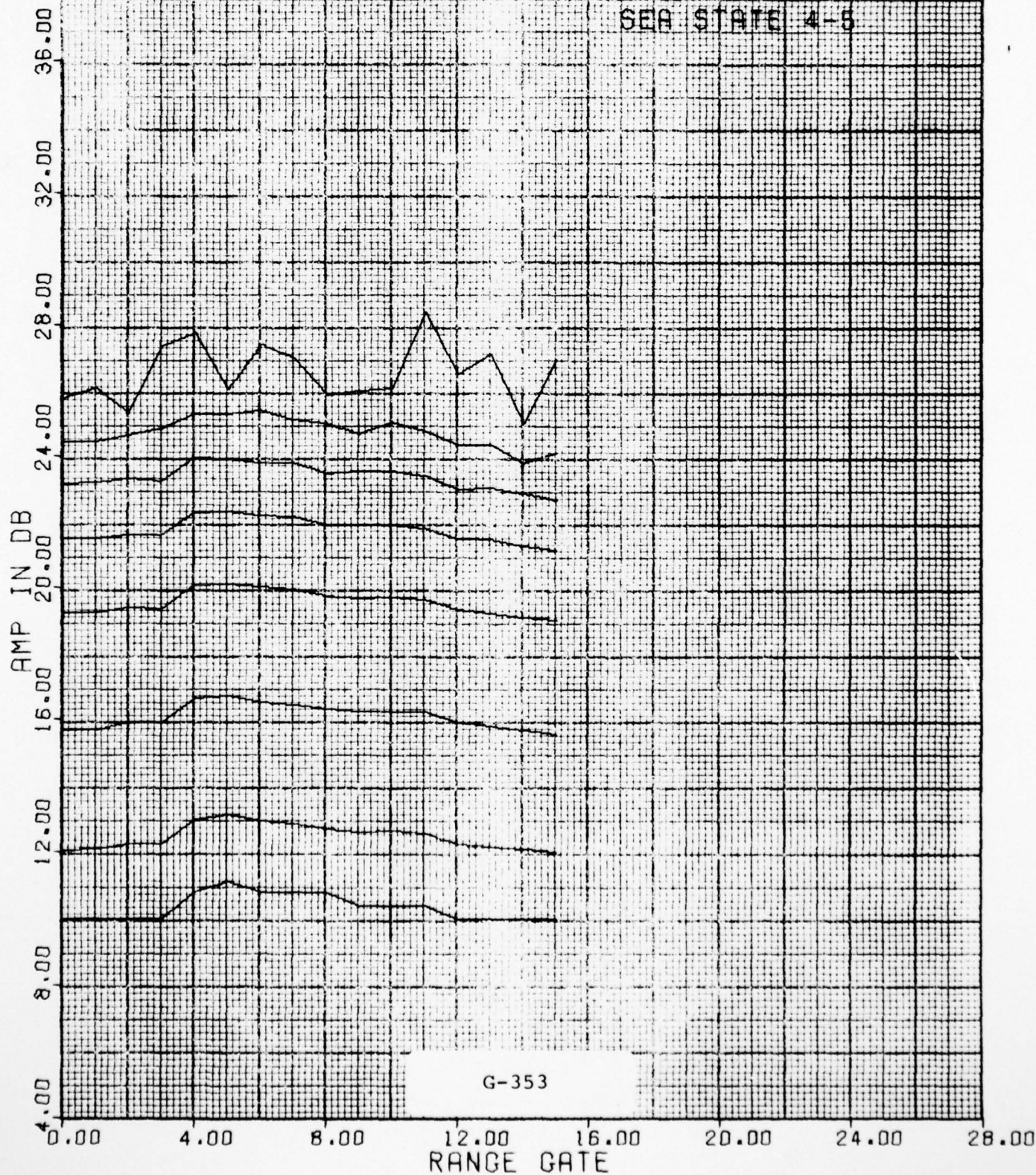
ABSOLUTE

RUN 6 FLT 6

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4-5



RC STATUS

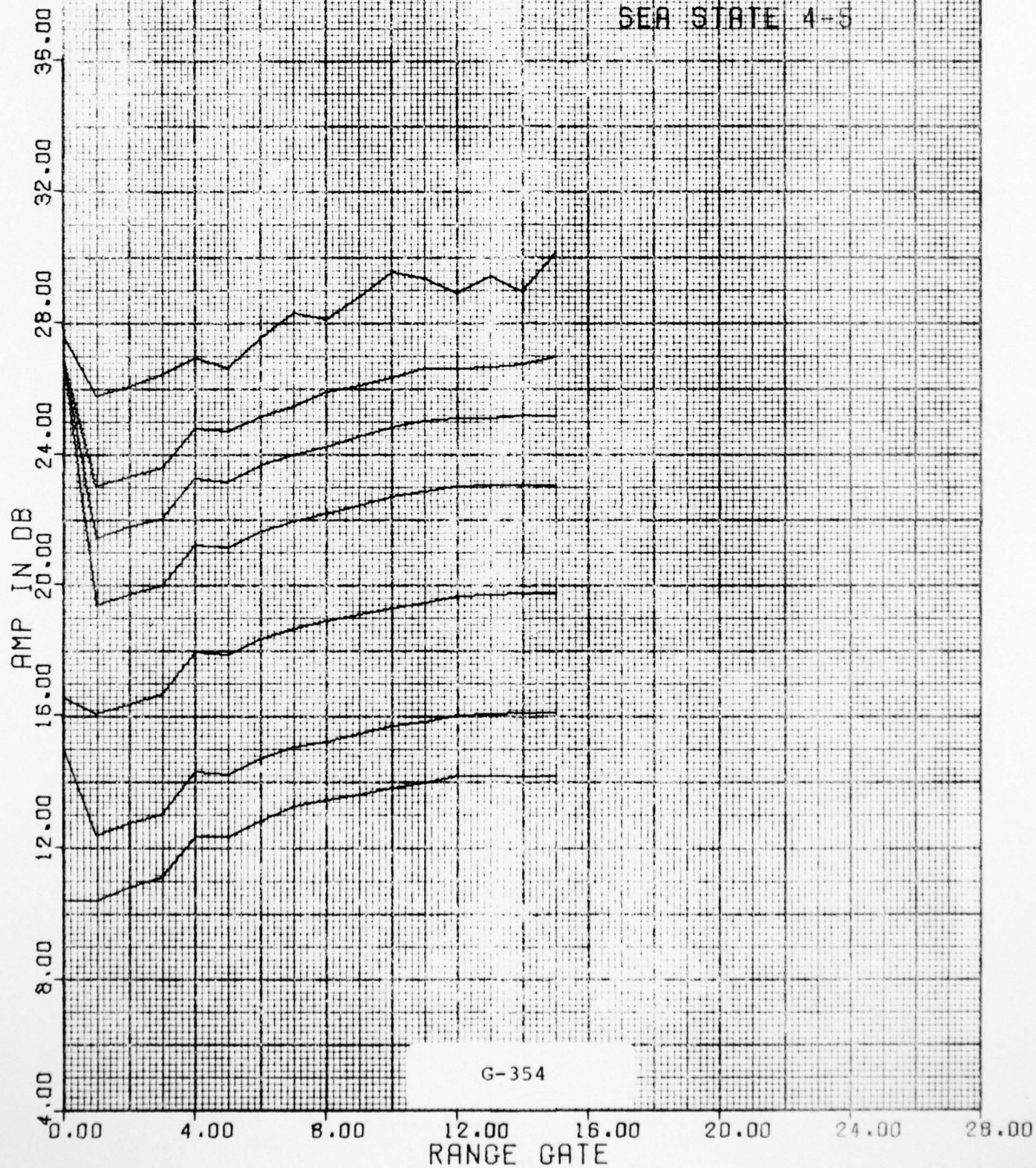
ABSOLUTE

RUN 7 FLI 6

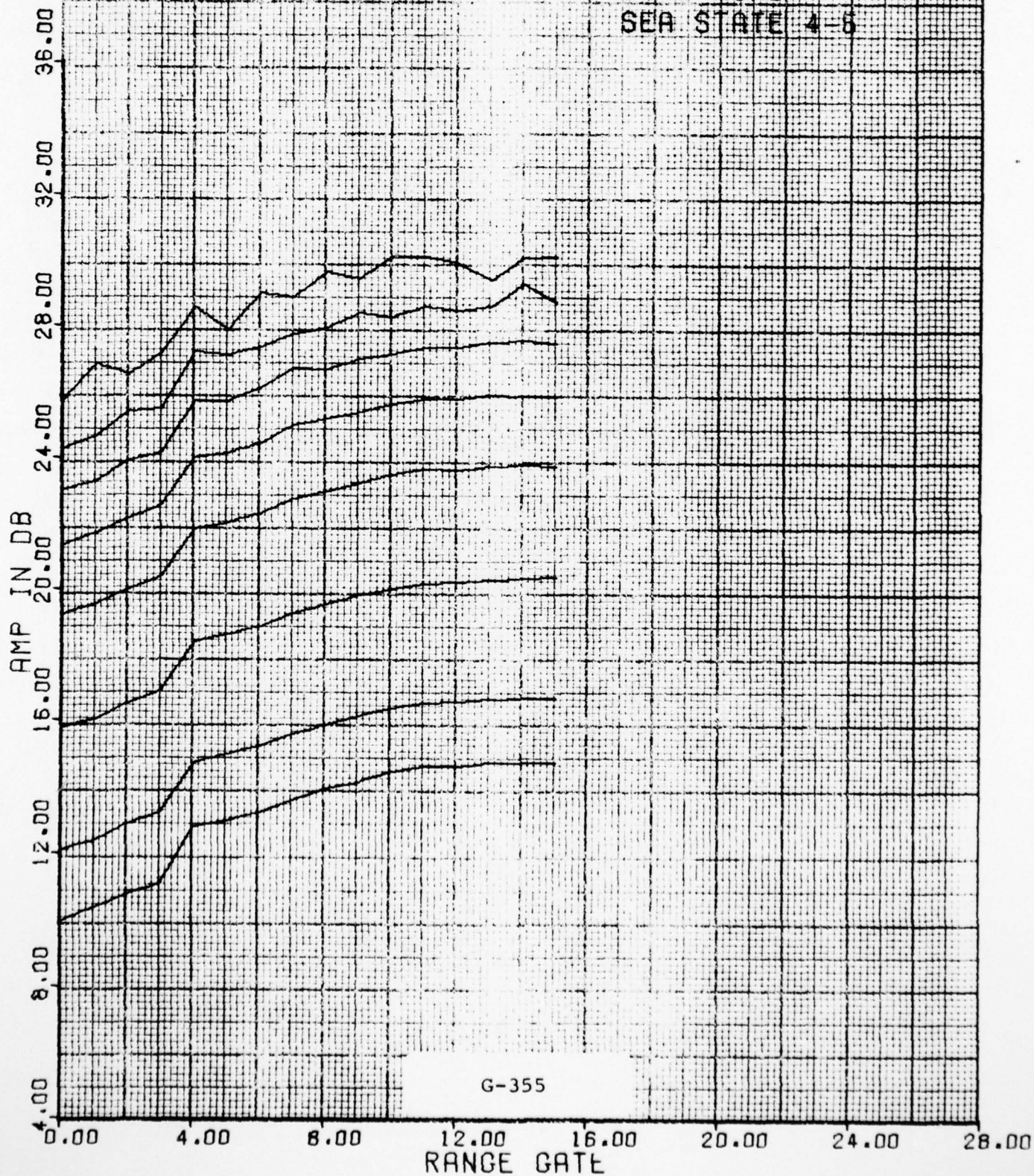
ALT (KFT) 9.3

UP-WIND

SEA STATE 4-5



RC STATS
ABSOLUTE
RUN 8 FLT 6
ALT (KFT) 3.3
DOWN-WIND
SEA STATE 4-5



RG STATS

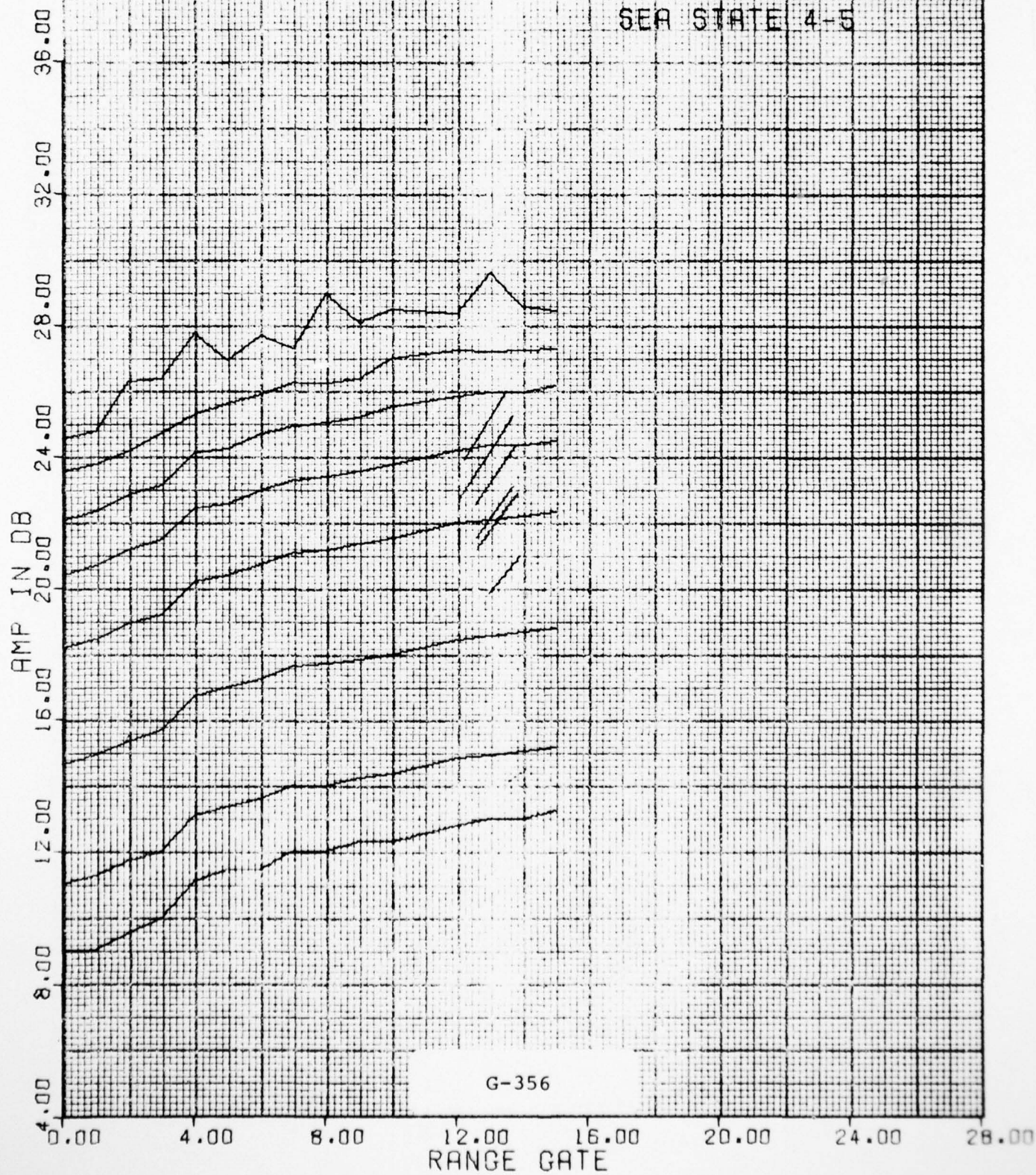
ABSOLUTE

RUN 9 FLT 6

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4-5



AD-A036 974

GENERAL DYNAMICS/POMONA CALIF POMONA DIV
TAGSEA PROGRAM. VOLUME IV. STANDARD CLUTTER ANALYSIS OUTPUTS.(U)
AUG 76

F/G 17/9
N00017-73-C-2244
NL

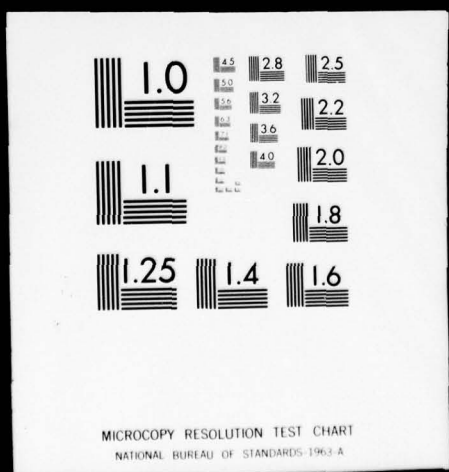
UNCLASSIFIED

4 of 6
ADA036974



4 OF 6

ADA036974



RG STATS

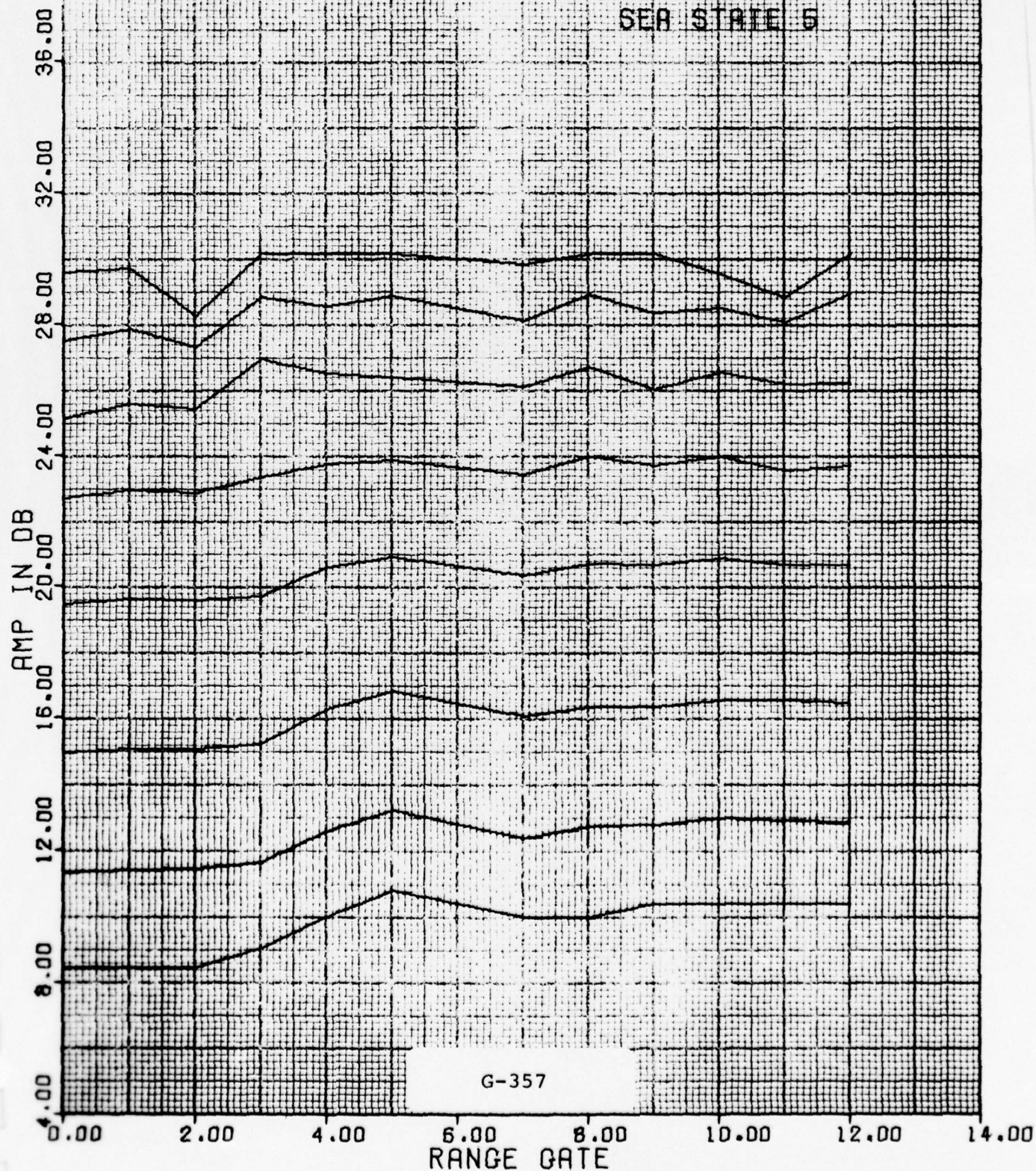
ABSOLUTE

RUN 1 FLT 7

ALT (KFT) 1.1

UP-WIND

SEA STATE 5



RG STATS

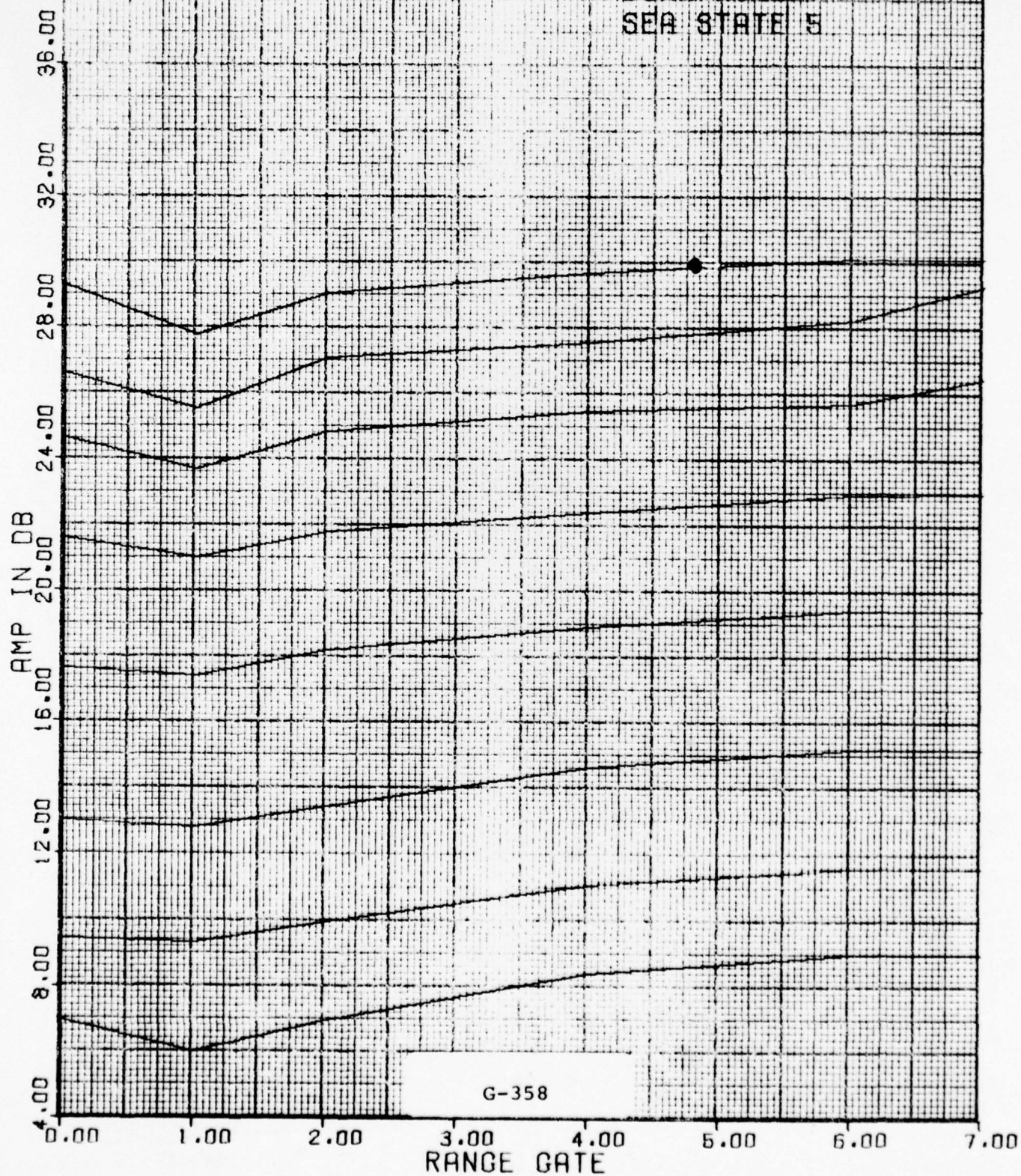
ABSOLUTE

RUN 2 FLT 7

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 5



G-358

RG STATS

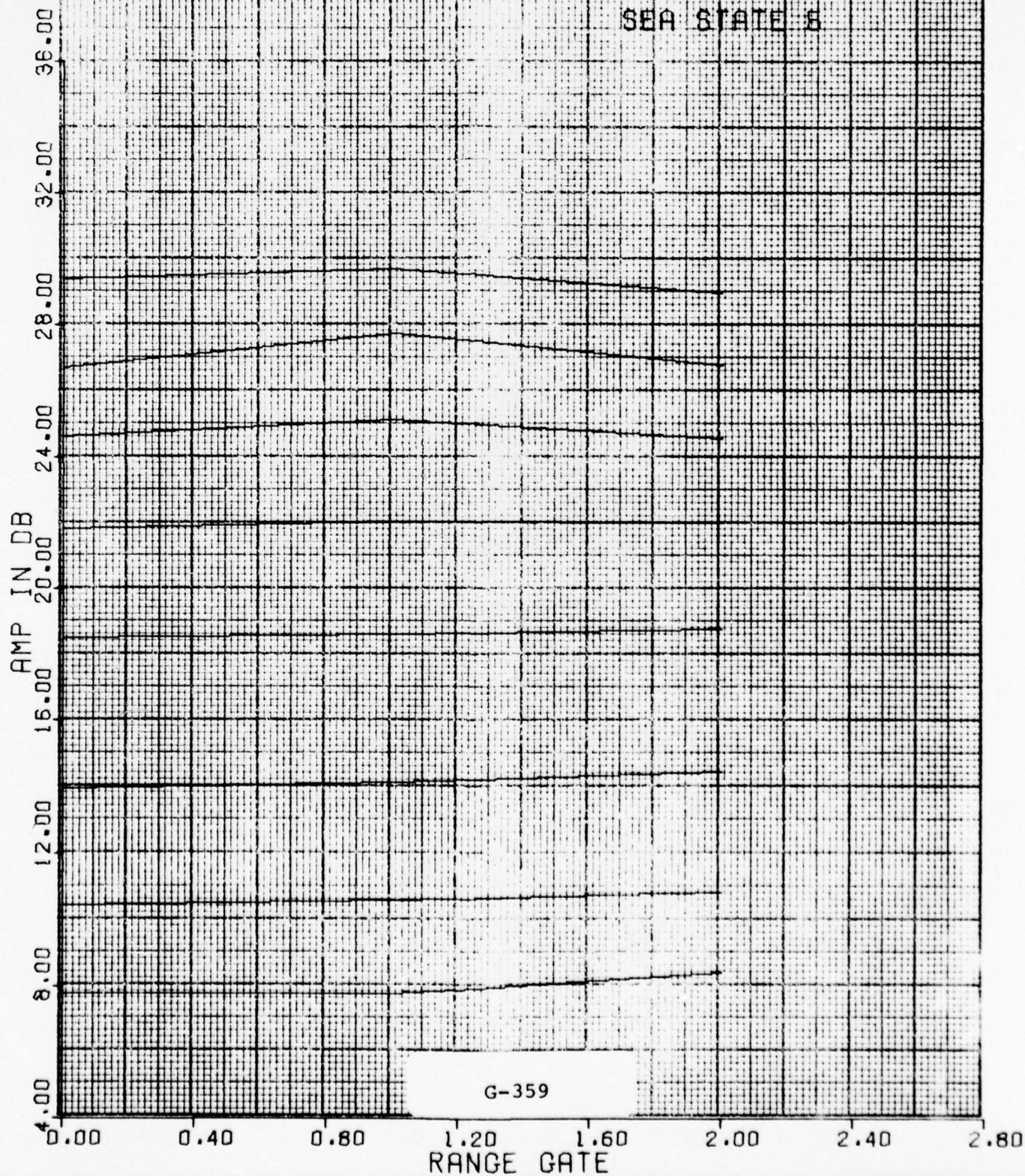
ABSOLUTE

RUN 3 FLT 7

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 8



RG STATS

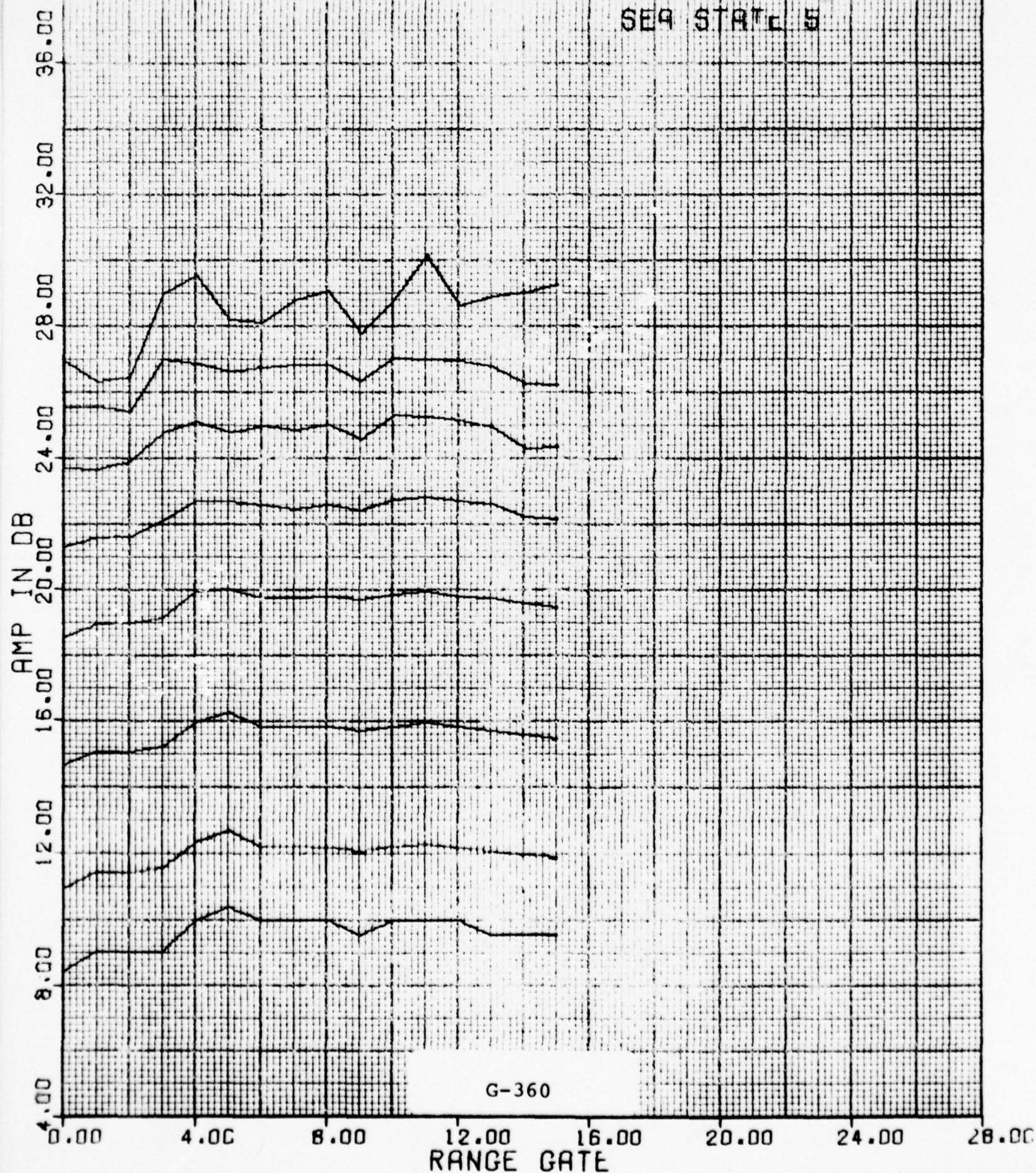
ABSOLUTE

RUN 4 FLT 7

ALT (KFT) 2.2

UP-WIND

SEA STATE 5



RG STATS

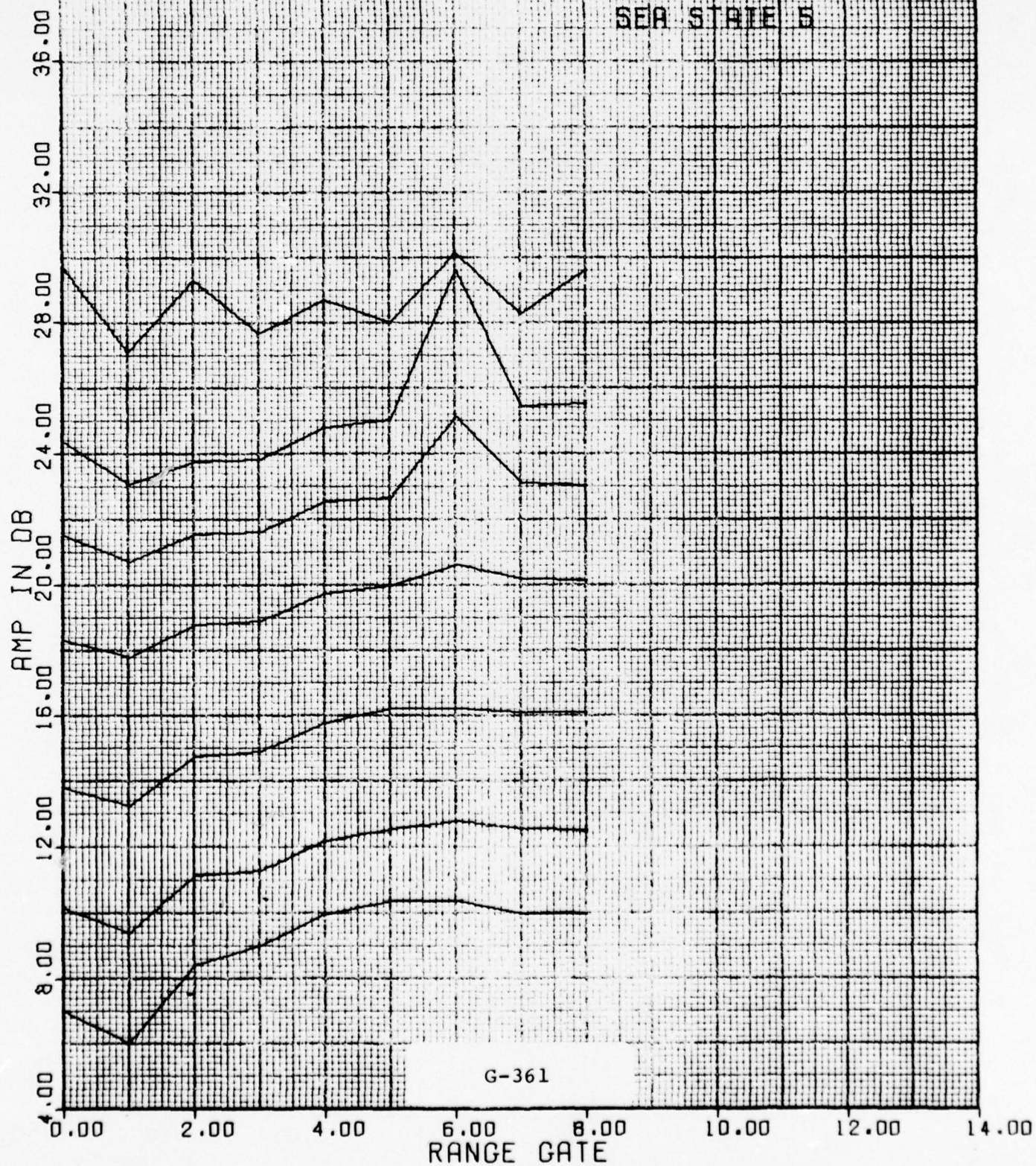
ABSOLUTE

RUN 6 FLT 7

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 5



RG STATS

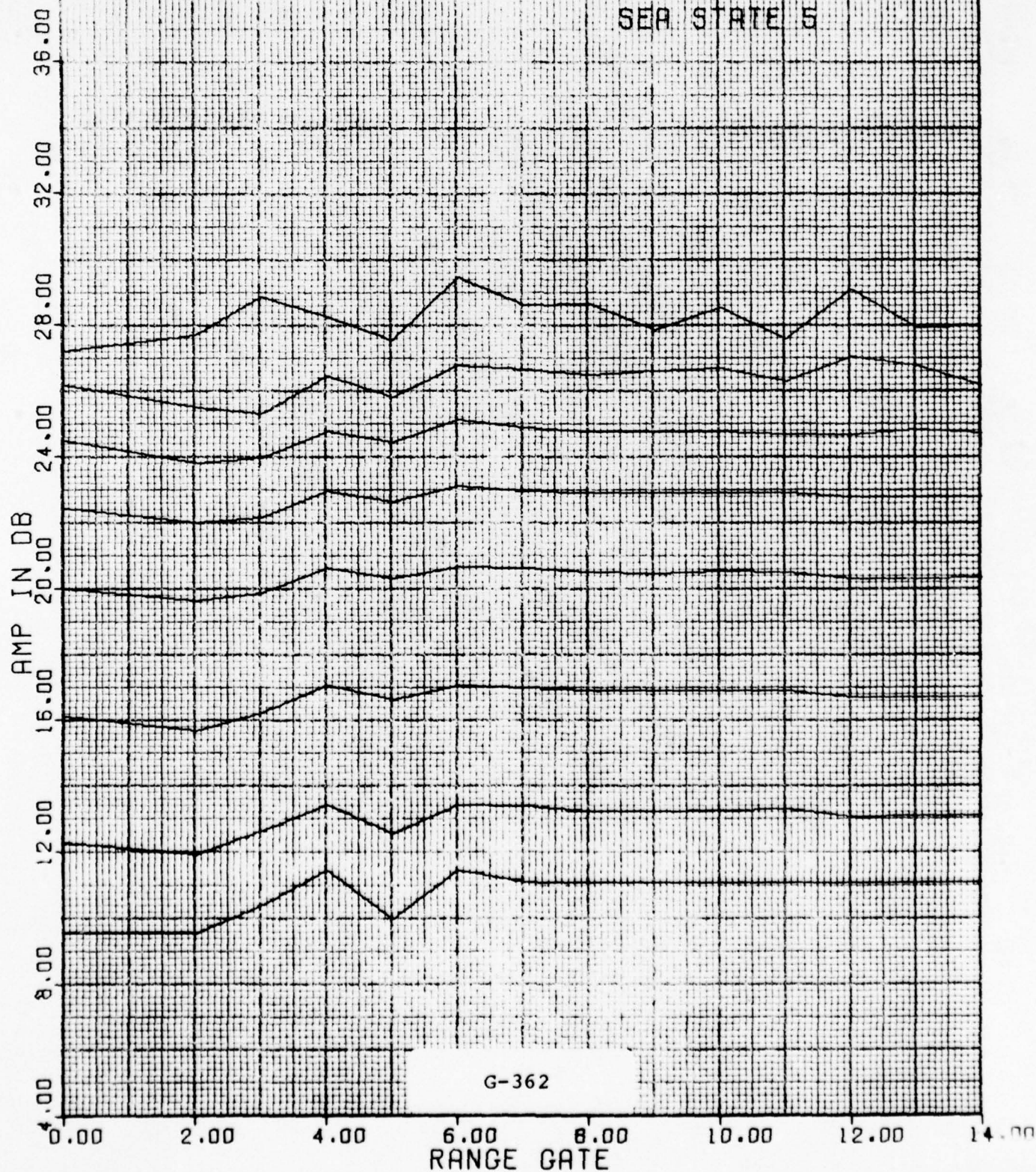
ABSOLUTE

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



RG STATS

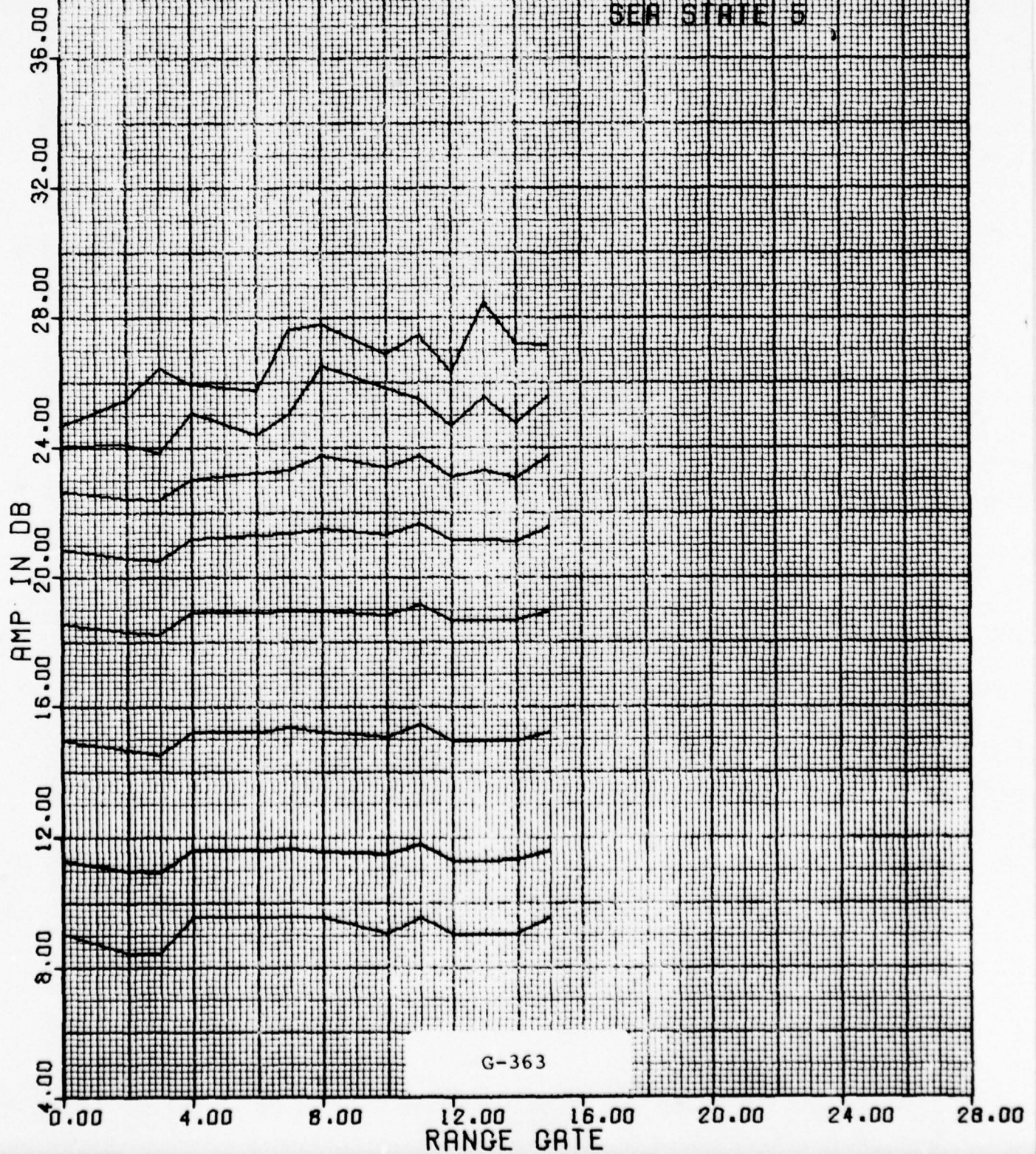
ABSOLUTE

RUN 8 FLT 7

ALT (KFT) 9.3

DOWN-WIND

SEA STATE 5



RG STATS

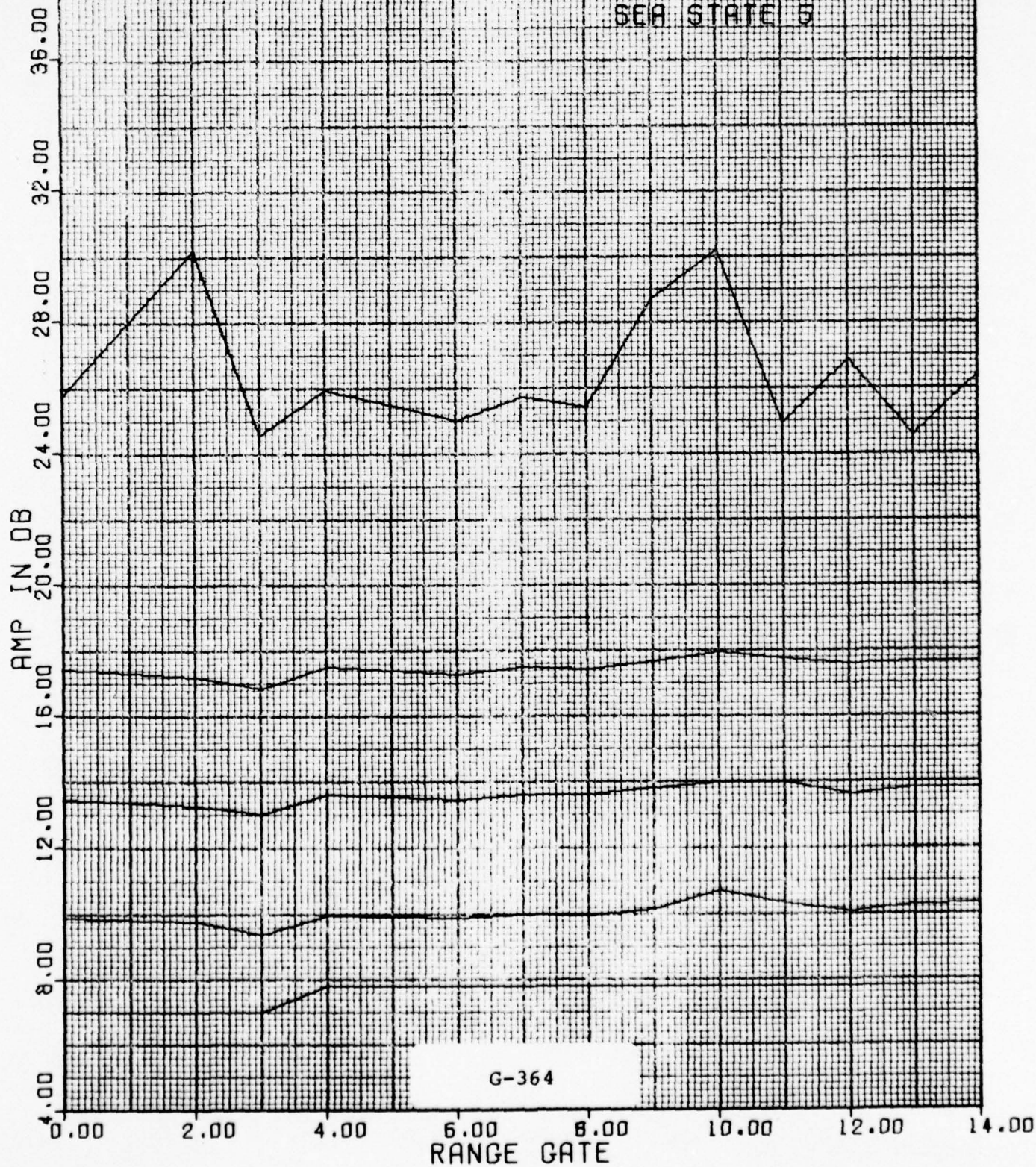
ABSOLUTE

RUN 9 FLT 7

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 5



RG STATS

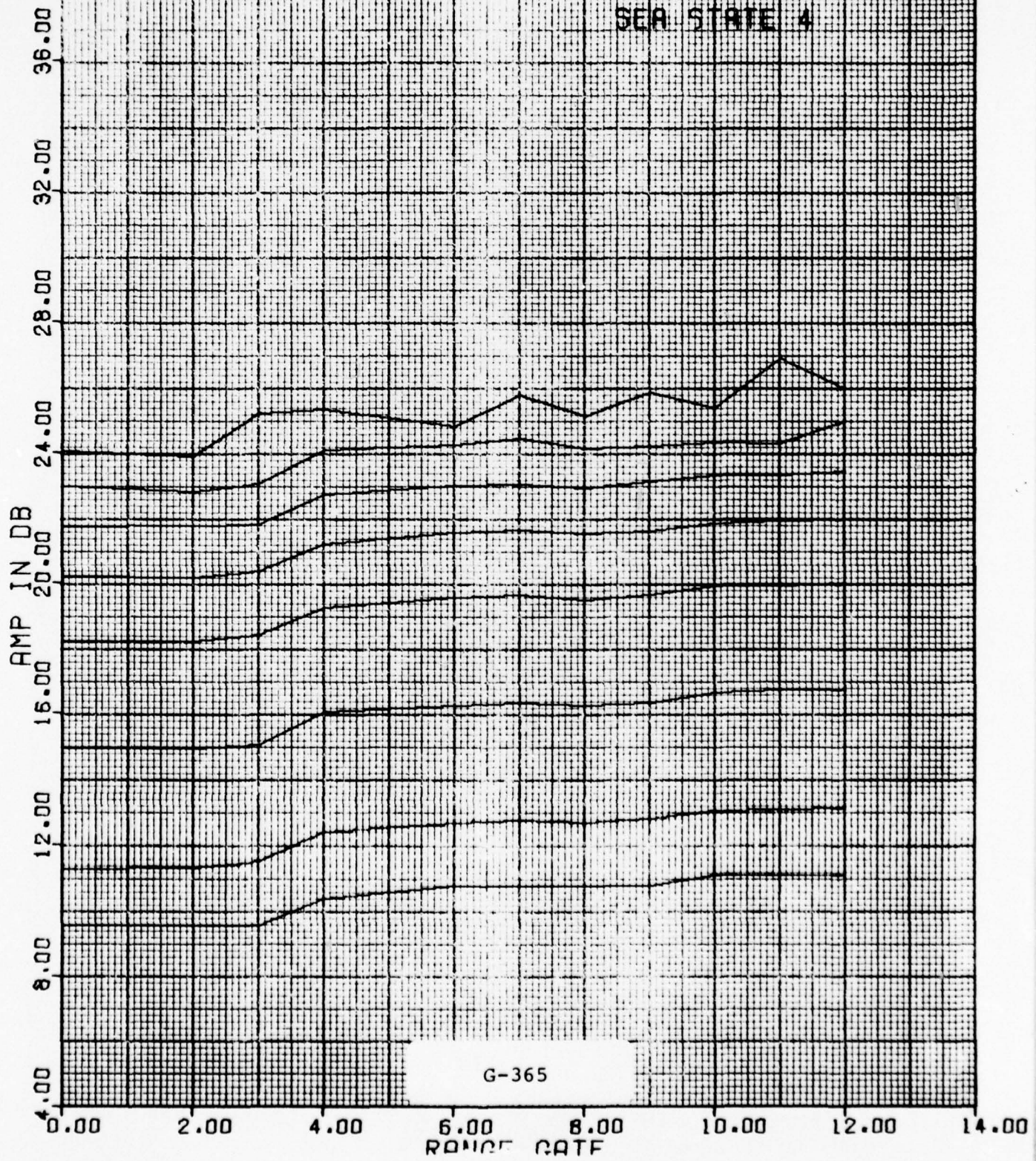
ABSOLUTE

RUN 1 FLT 8

ALT (KFT) 0.5

UP-WIND

SEA STATE 4



G-365

RG STATS

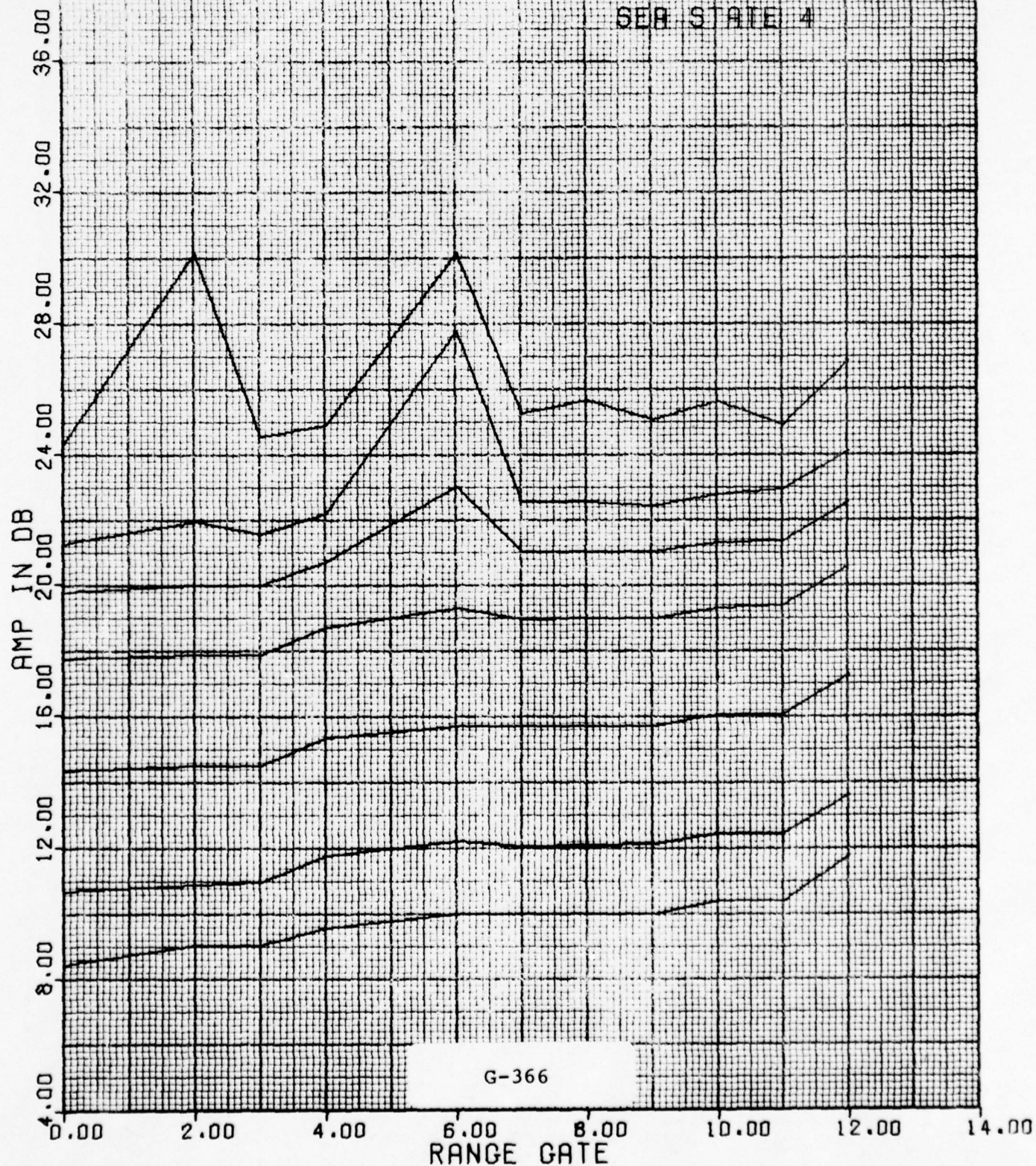
ABSOLUTE

RUN 2 FLT 8

ALT (KFT) 0.5

DOWN-WIND

SEA STATE 4



RG STATS

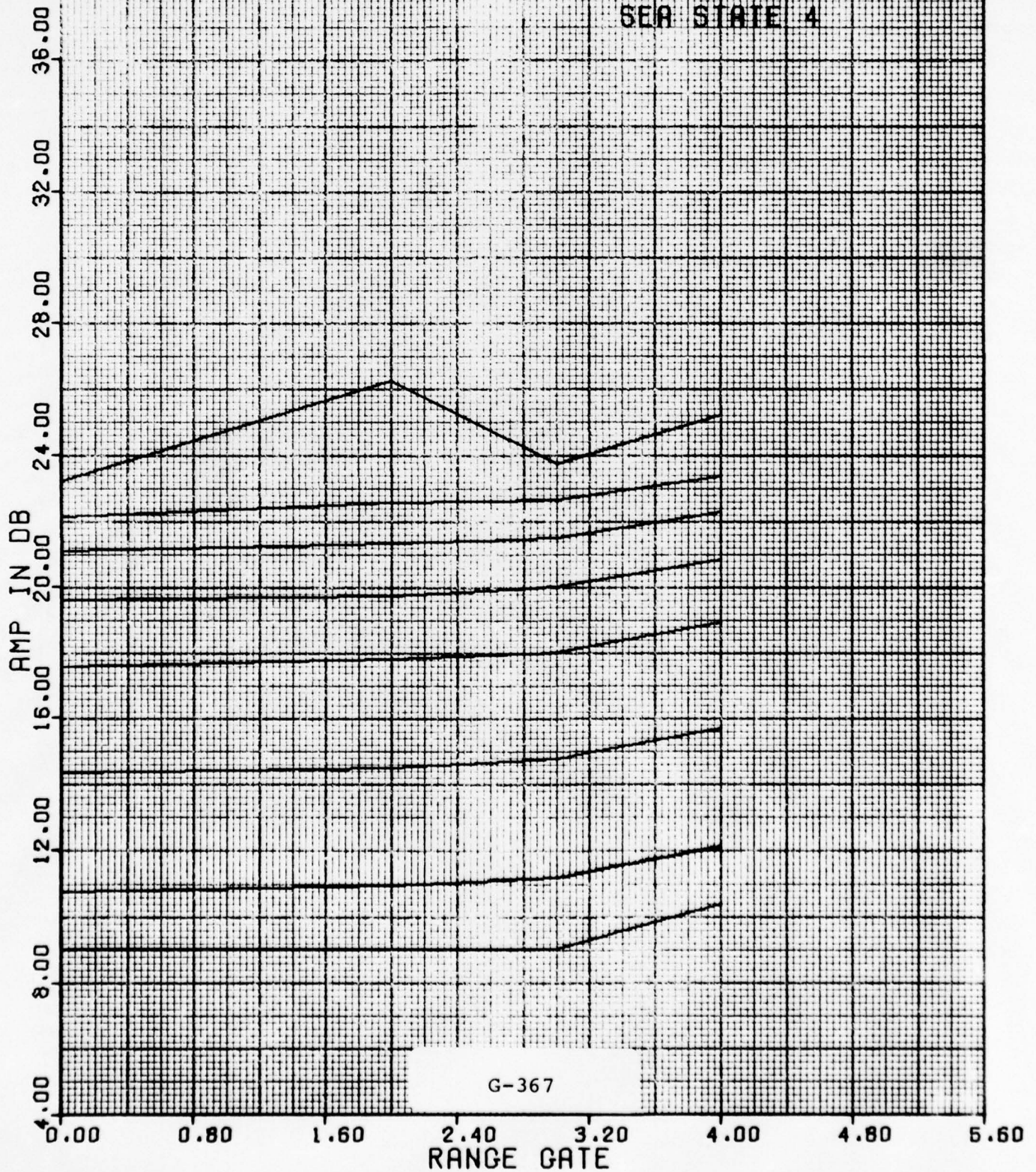
ABSOLUTE

RUN 3 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



RG STATS

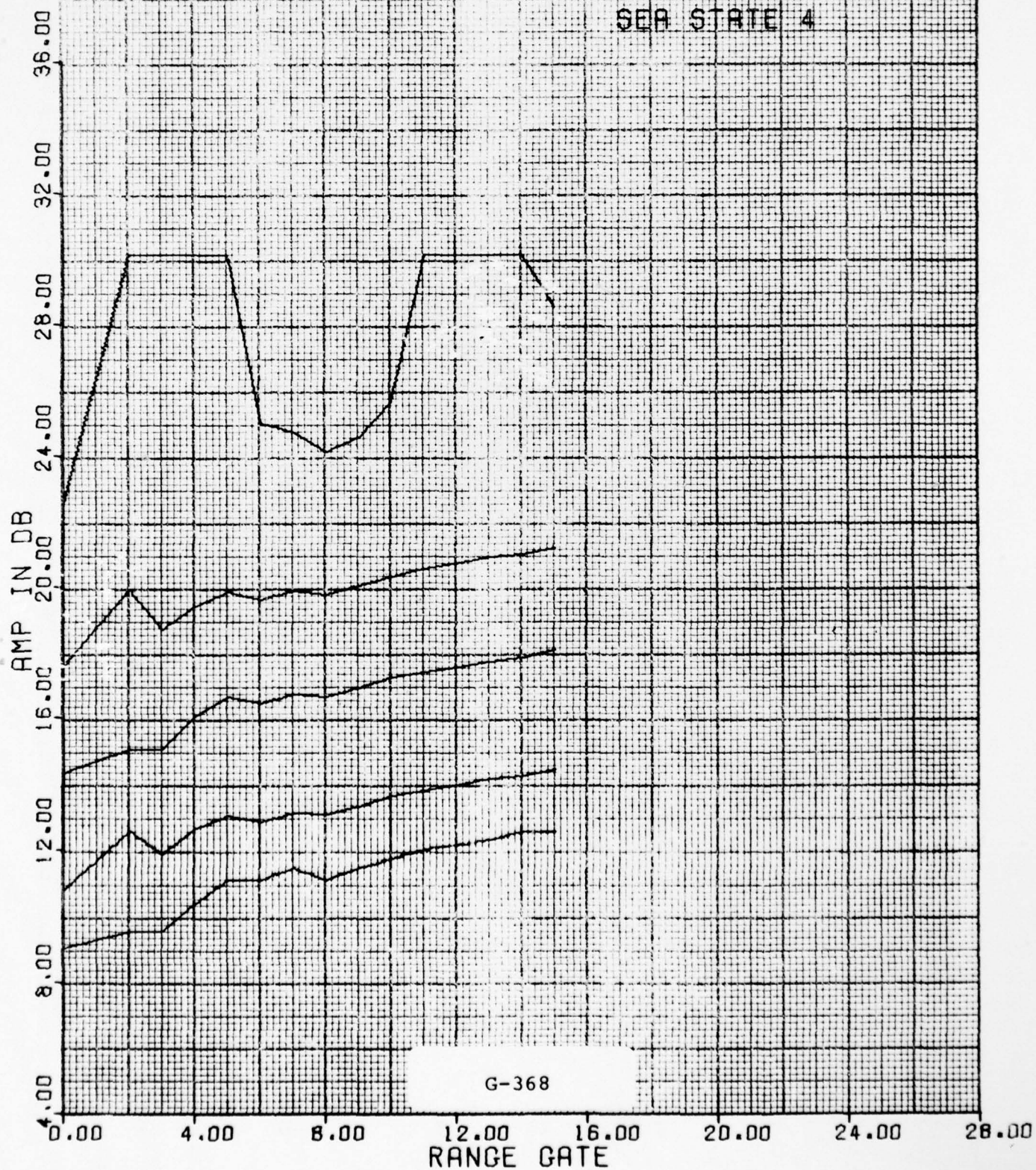
ABSOLUTE

RUN 12 FLT 8

ALT (KFT) 0.5

CROSS-WIND

SEA STATE 4



RG STATS

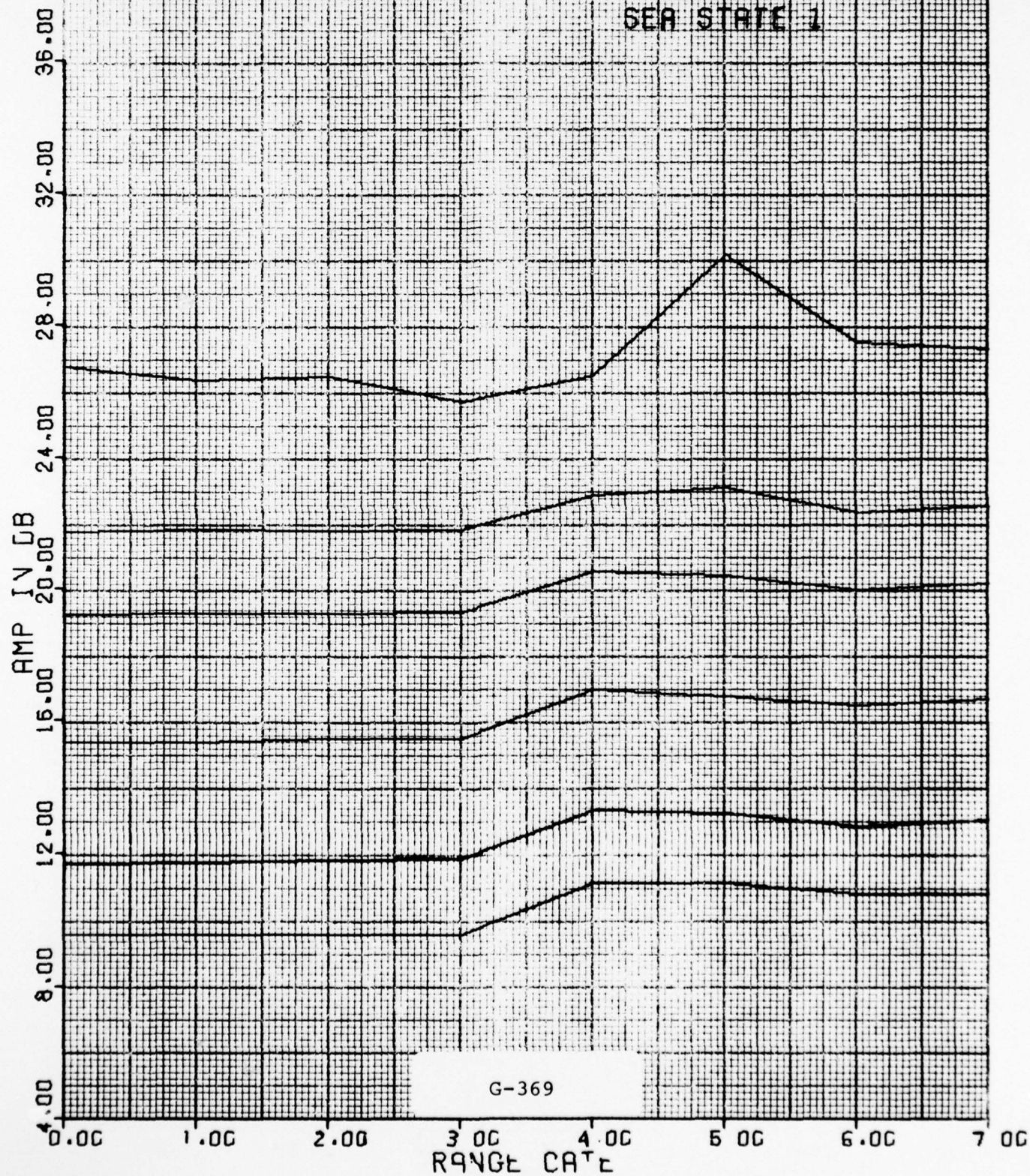
ABSOLUTE

RUN 4 FLT 11

ALT (KFT) 2.2

UP-WIND

SEA STATE 1



RG STATS

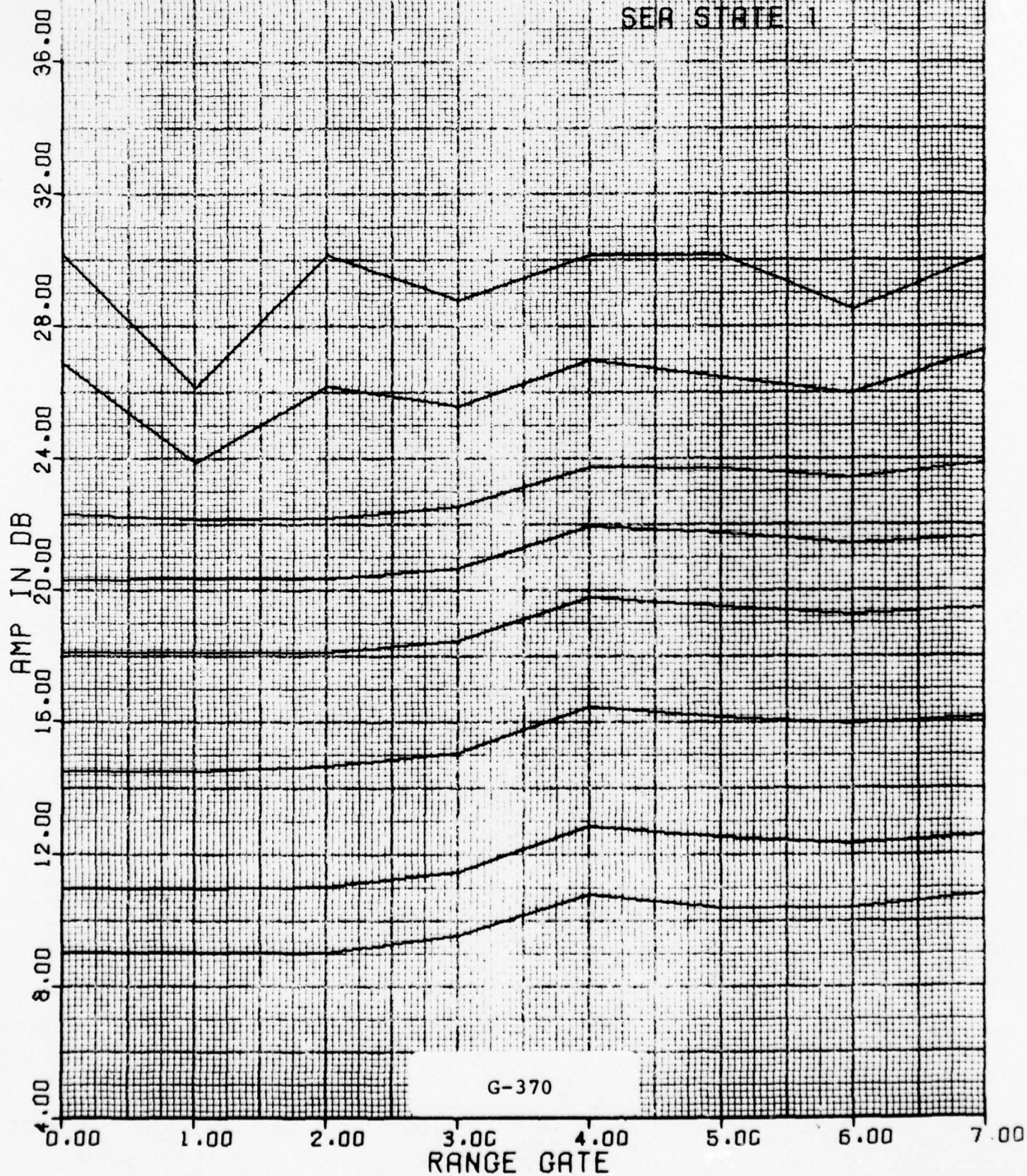
ABSOLUTE

RUN 5 FLT 11

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 1



RG STATS

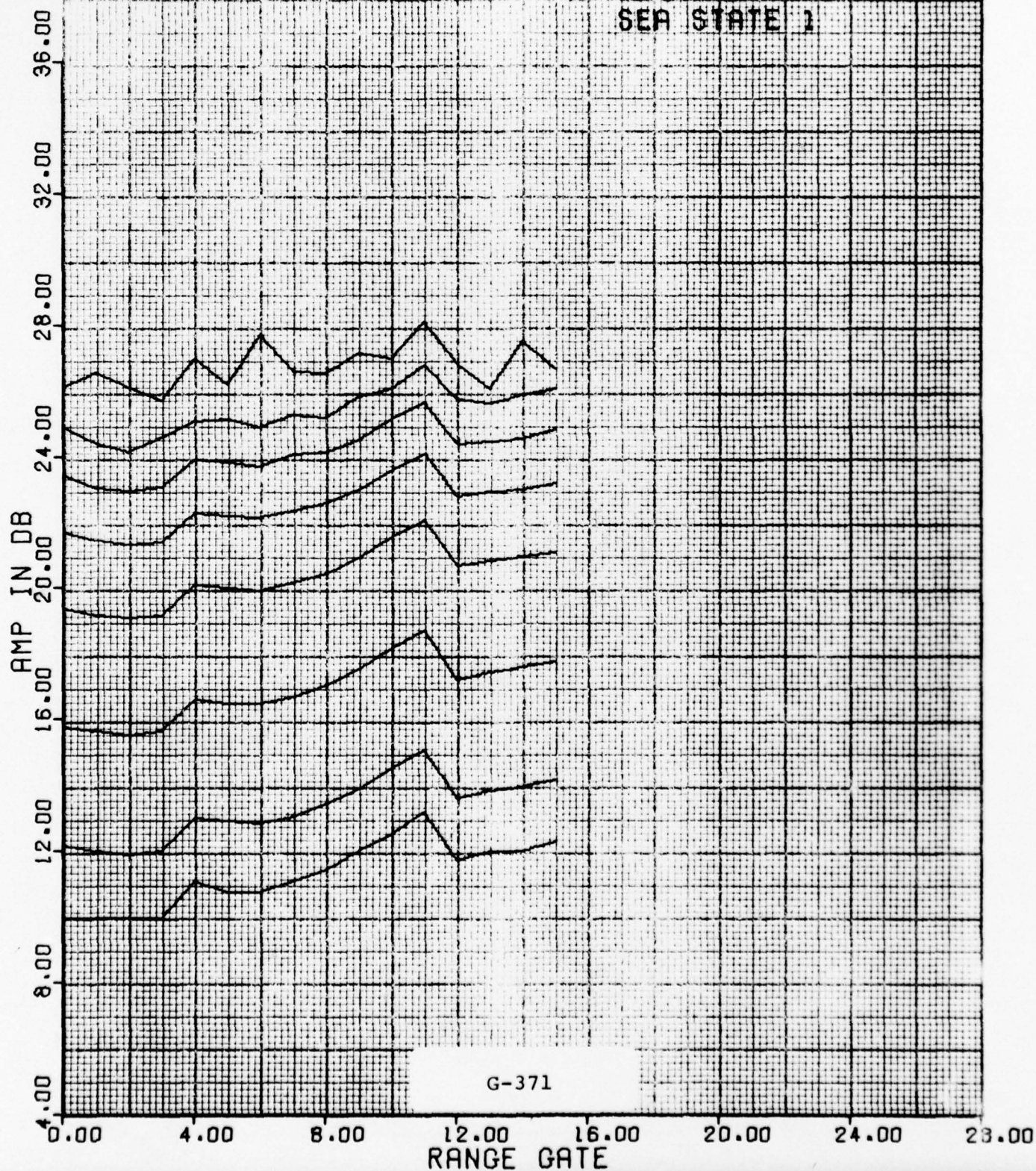
ABSOLUTE

RUN 7 FLT 11

ALT (KFT) 3.3

UP-WIND

SEA STATE 1



RG STATS

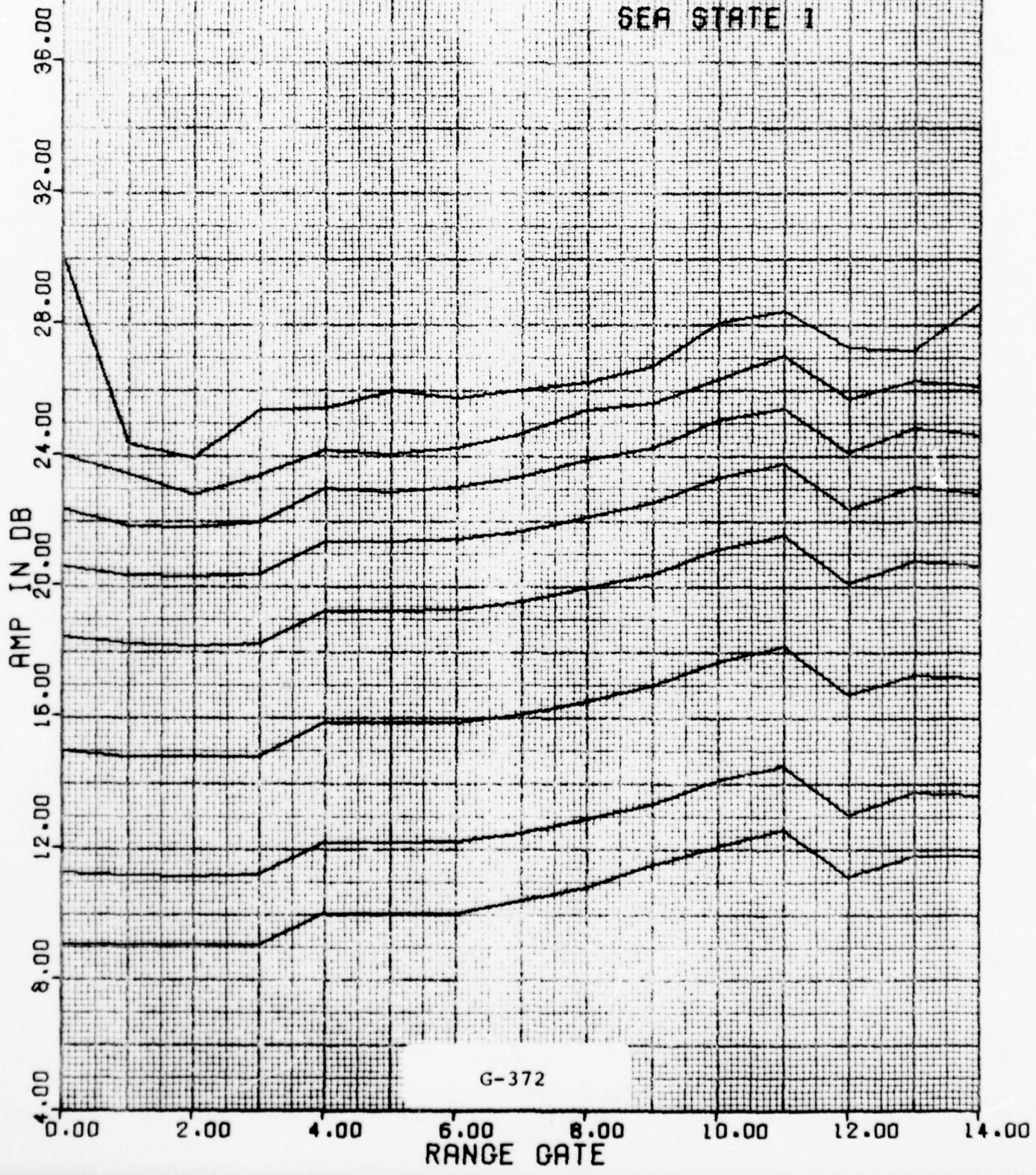
ABSOLUTE

RUN 8 FLT 11

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 1



RG STATUS

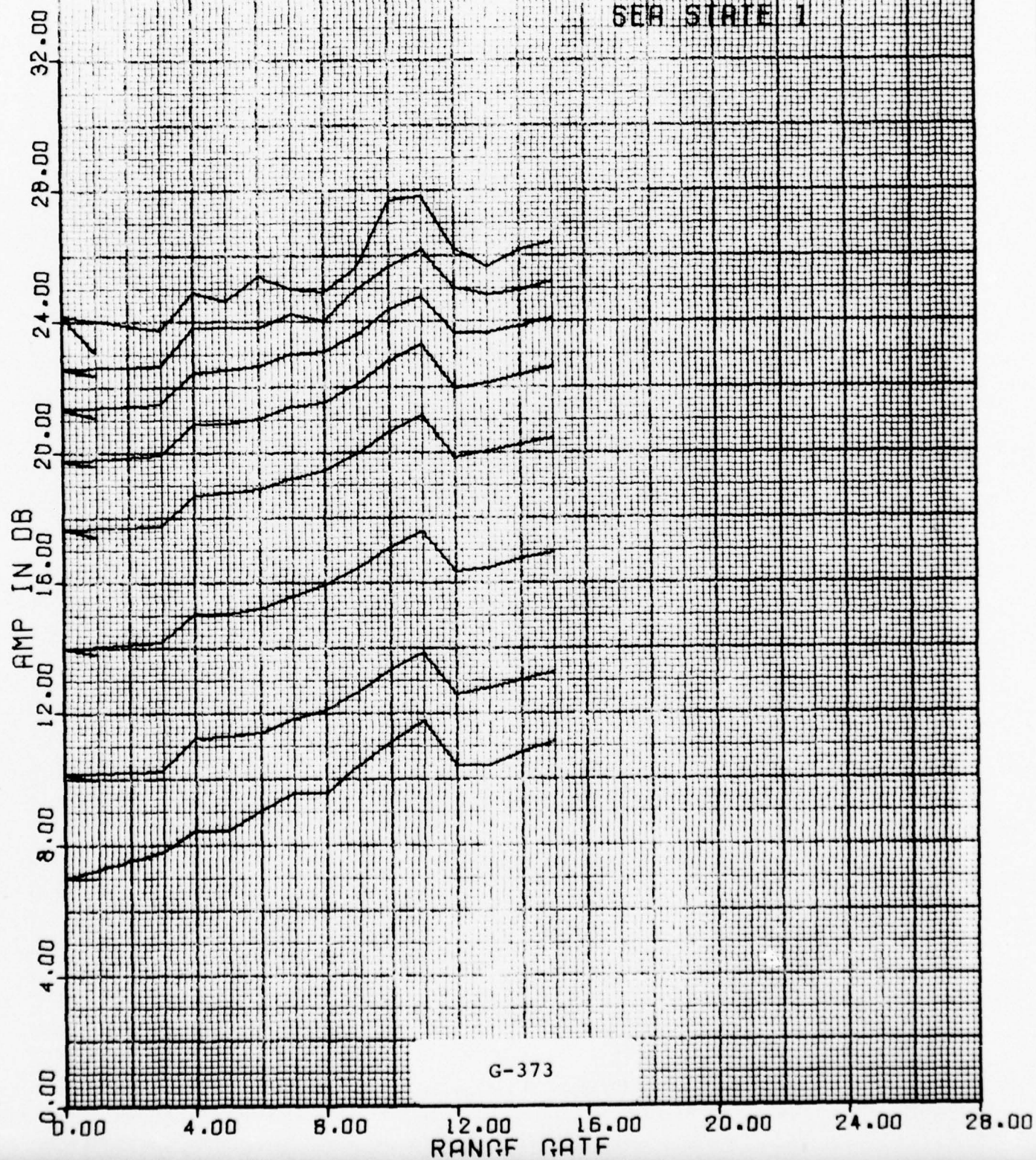
ABSOLUTE

RUN 9 FLT 11

ALT (KFT) 9.3

CROSS-WIND

SEA STATE 1



RG STATS

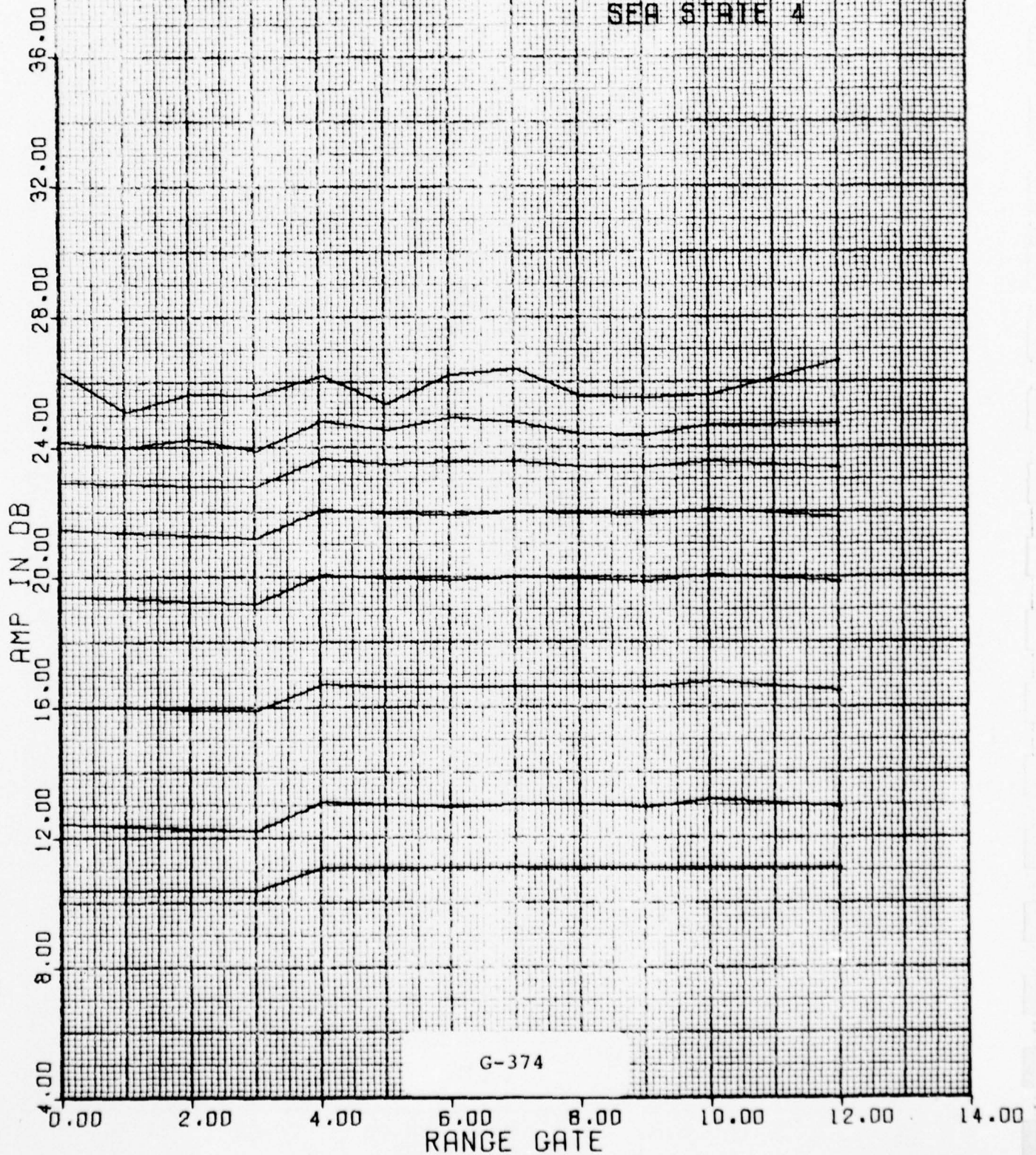
ABSOLUTE

RUN 1 FLT 16

ALT (KFT) 1.1

UP-WIND

SEA STATE 4



RG STAT8

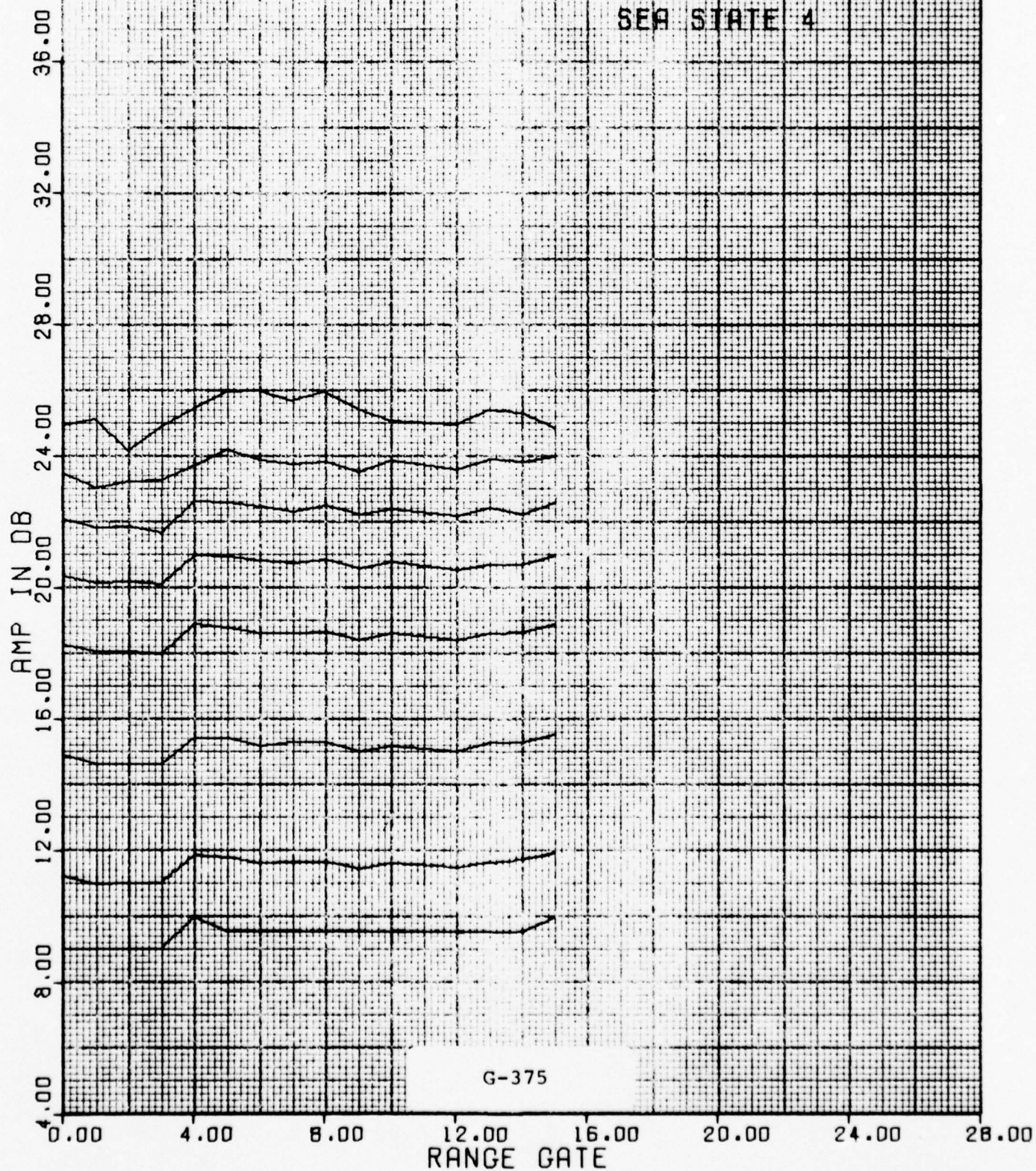
ABSOLUTE

RUN 2 FLT 18

ALT (KFT) 1.1

DOWN-WIND

SEA STATE 4



RG STATS

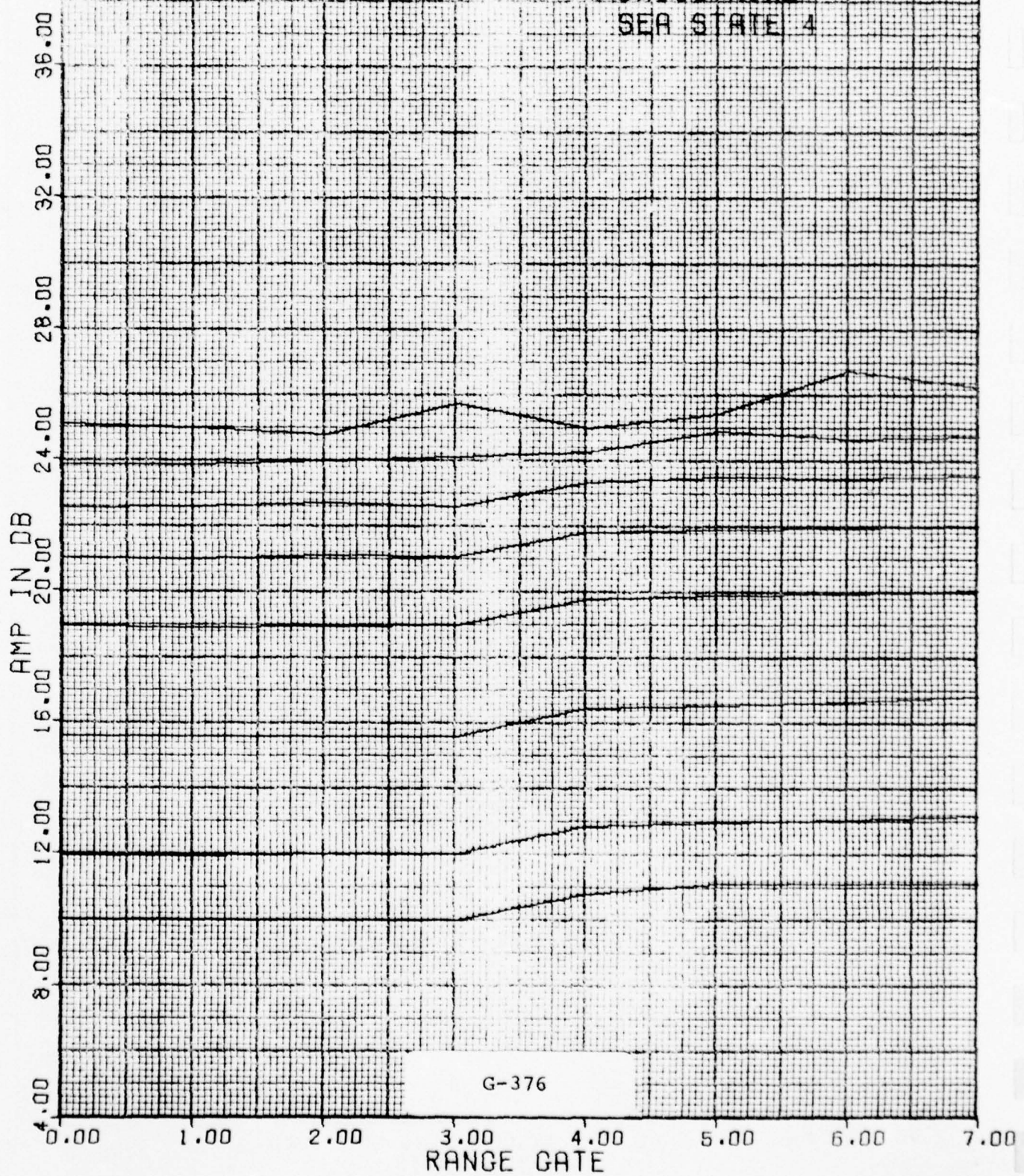
ABSOLUTE

RUN 3 FLT 16

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 4



G-376

RG STATS

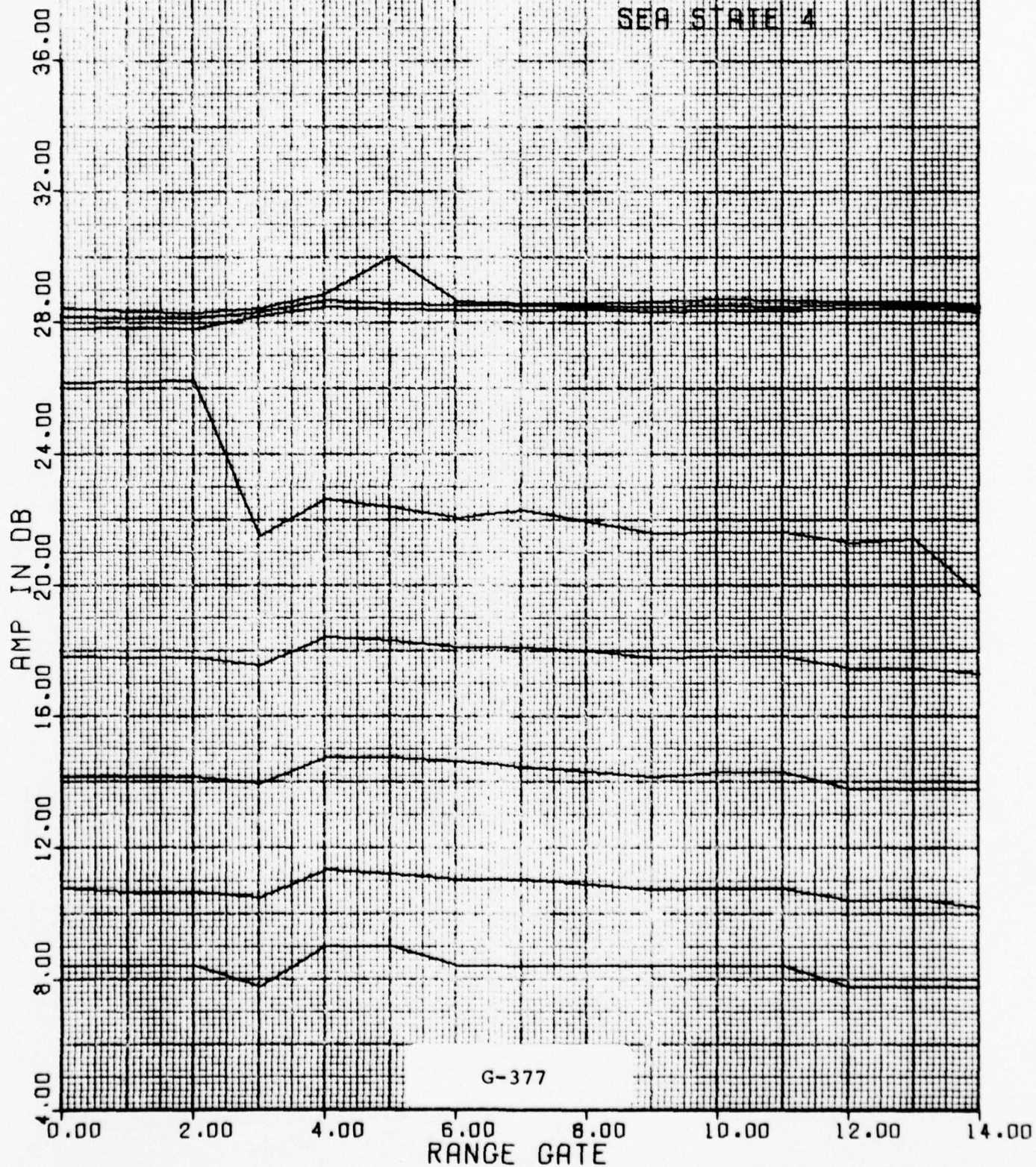
ABSOLUTE

RUN 5 FLT 16

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4



G-377

RG STATS

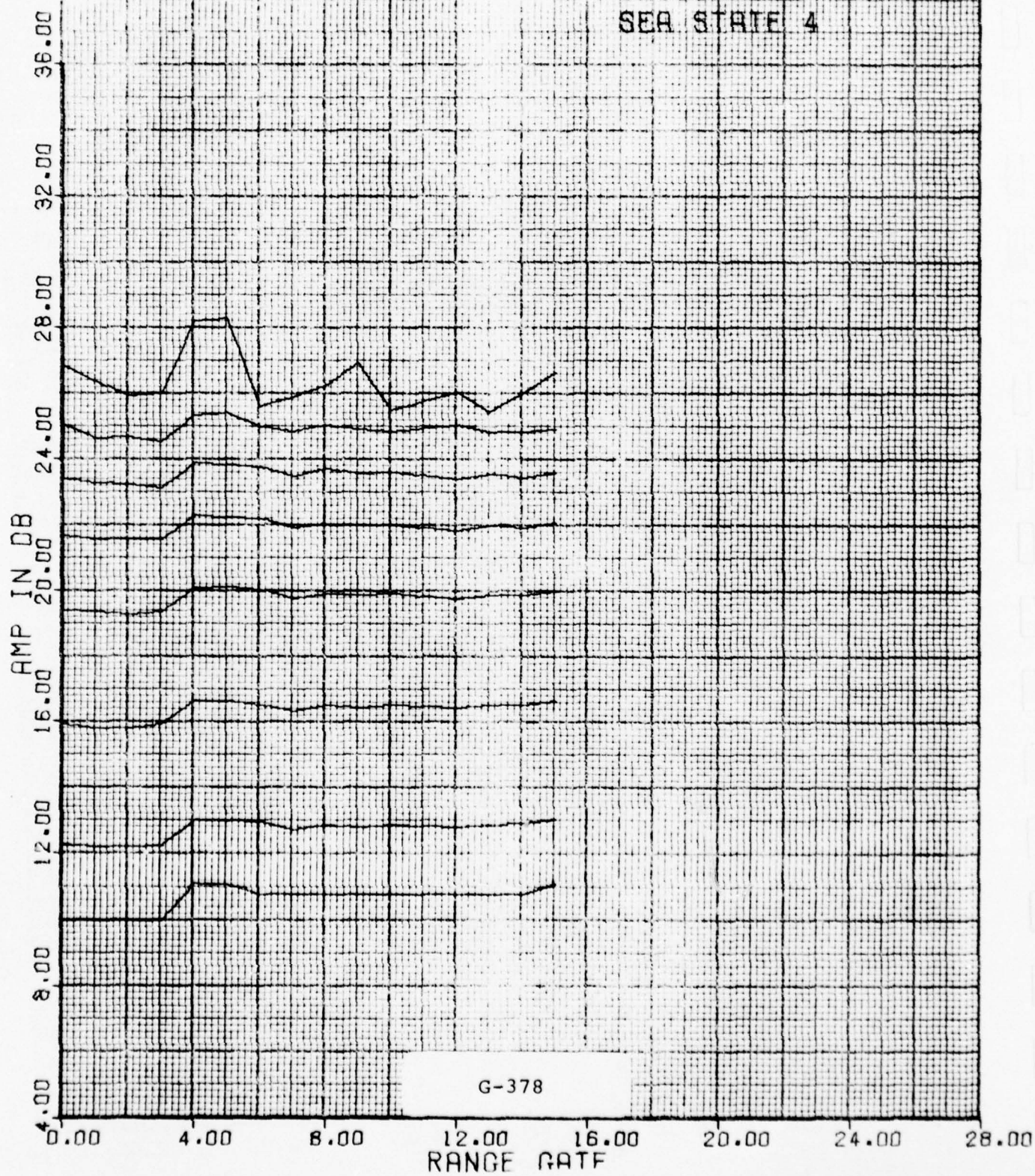
ABSOLUTE

RUN 6 FLT 16

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



RG STATS

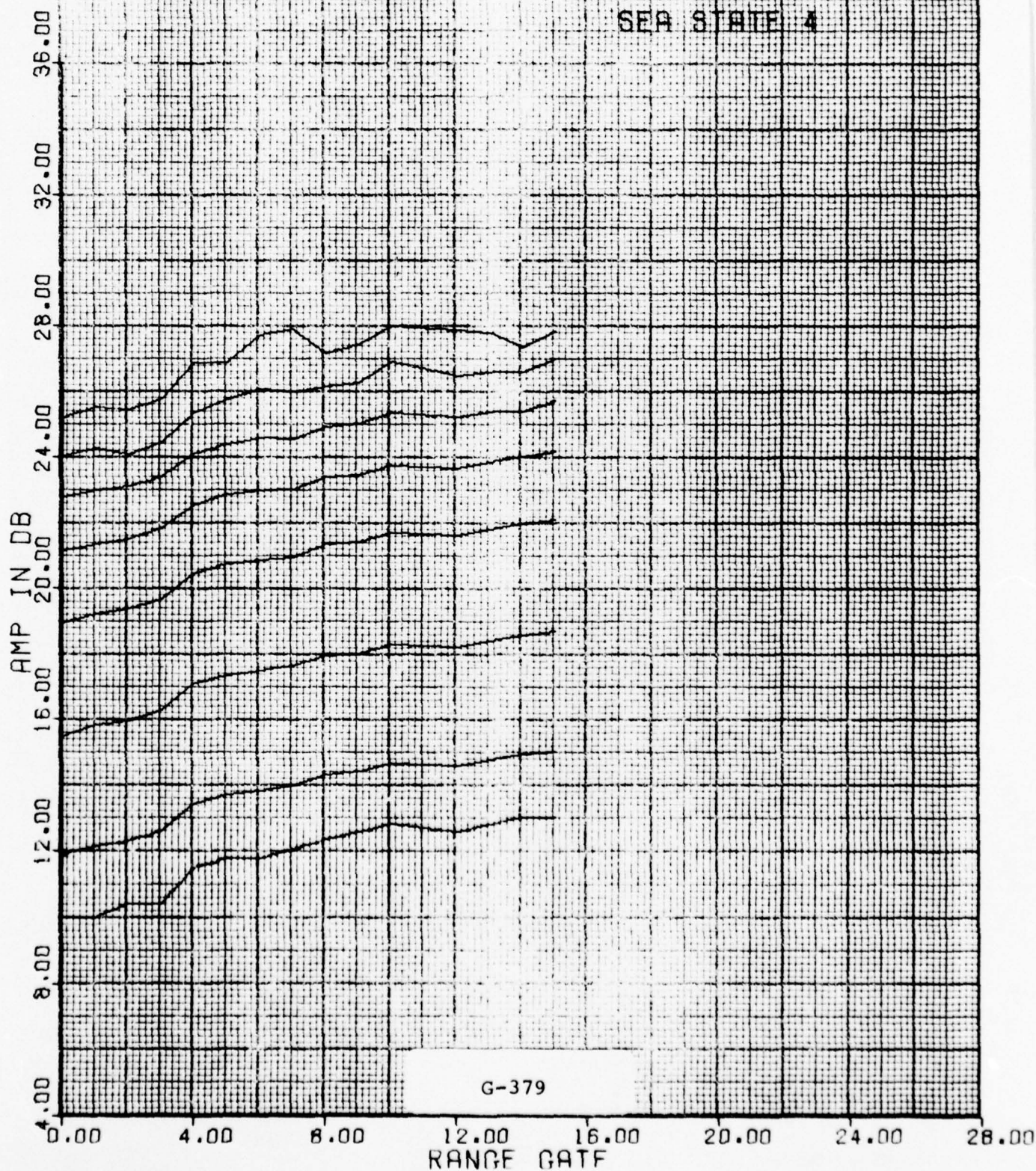
ABSOLUTE

RUN 7 FLT 16

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



RG STATS

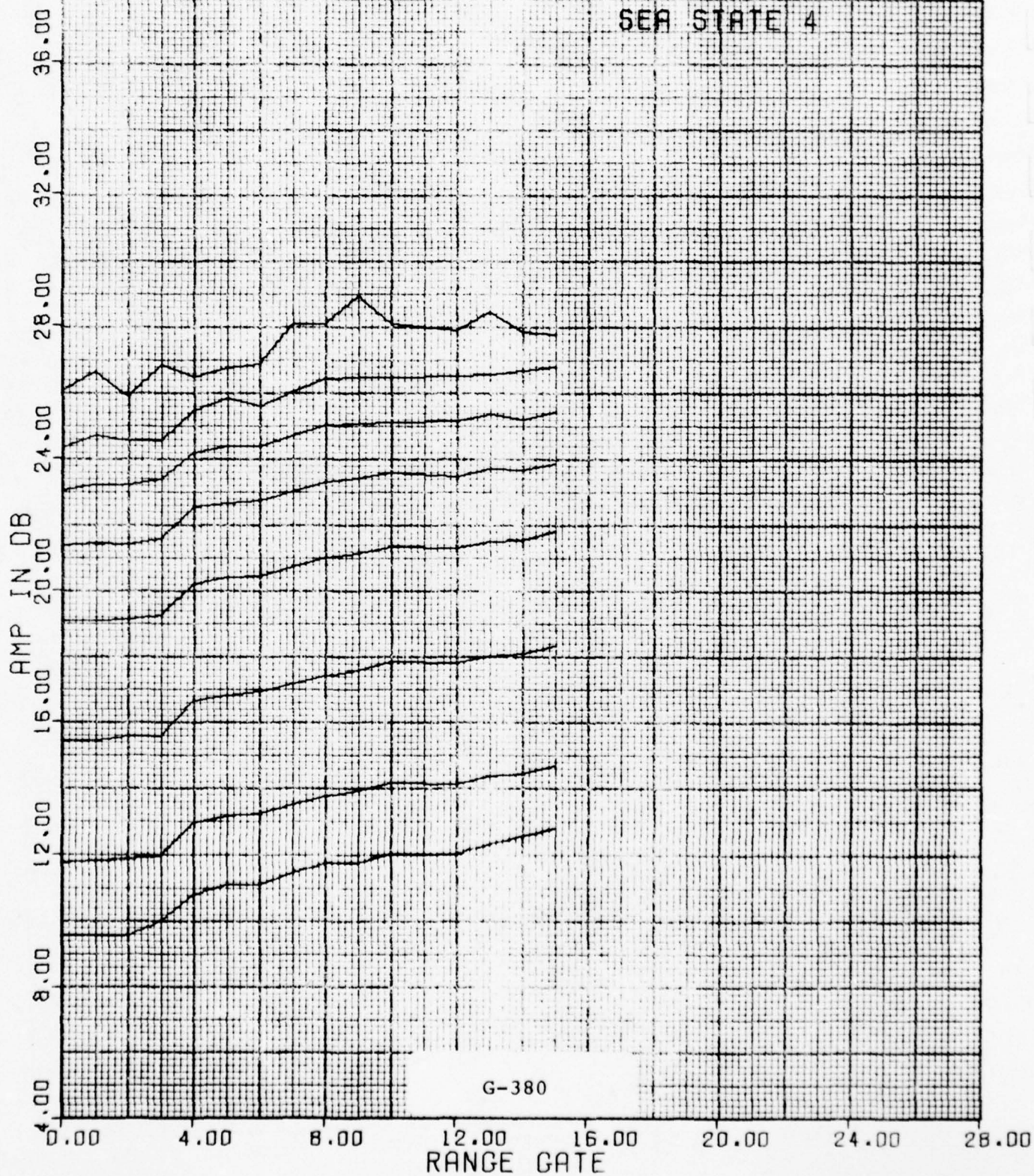
ABSOLUTE

RUN 9 FLT 16

ALT (KFT) 3.3

CROSS-WIND

SEA STATE 4



RG STATS

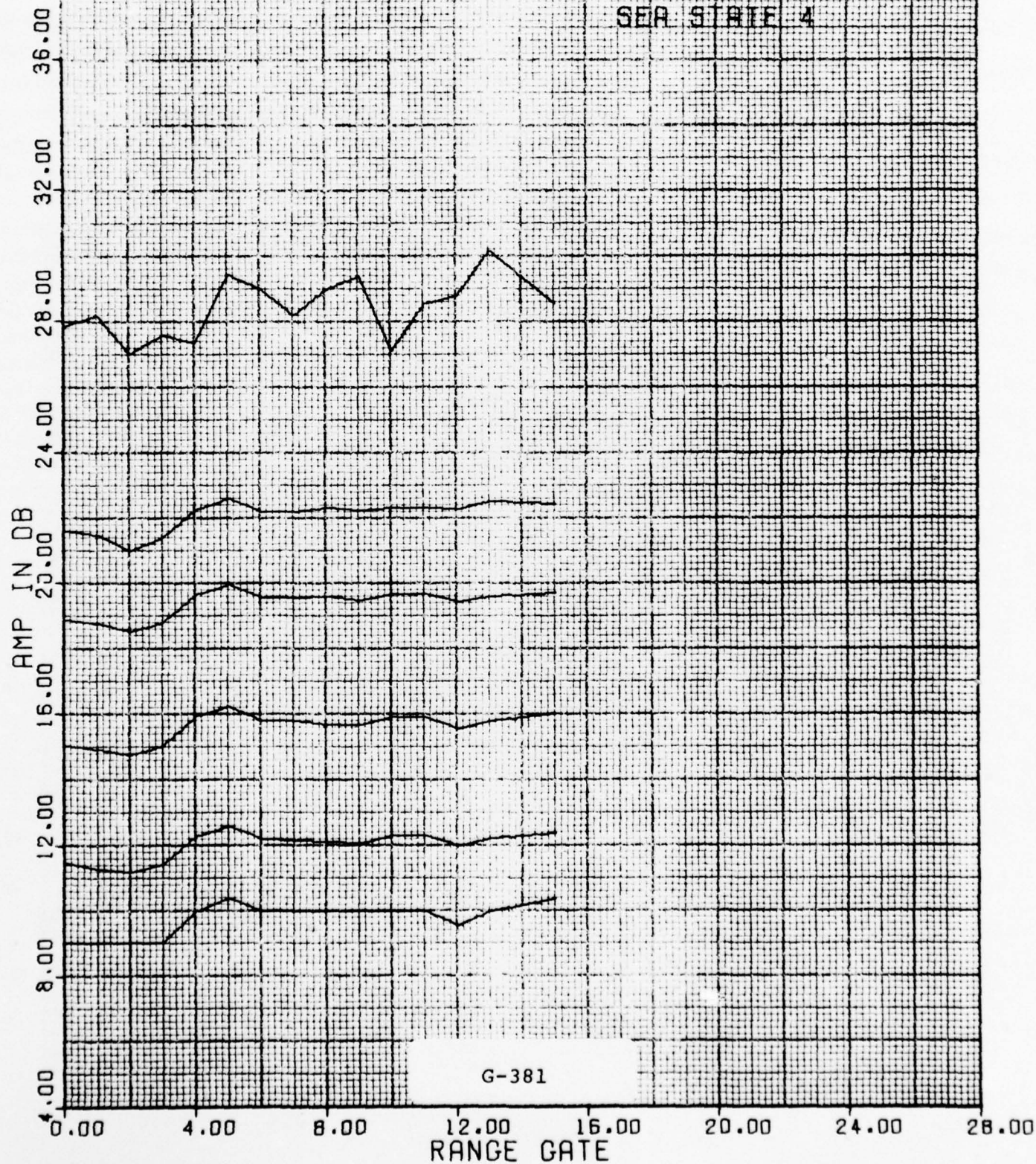
ABSOLUTE

RUN 4 FLT 17

ALT (KFT) 2.2

UP-WIND

SEA STATE 4



RG STATS

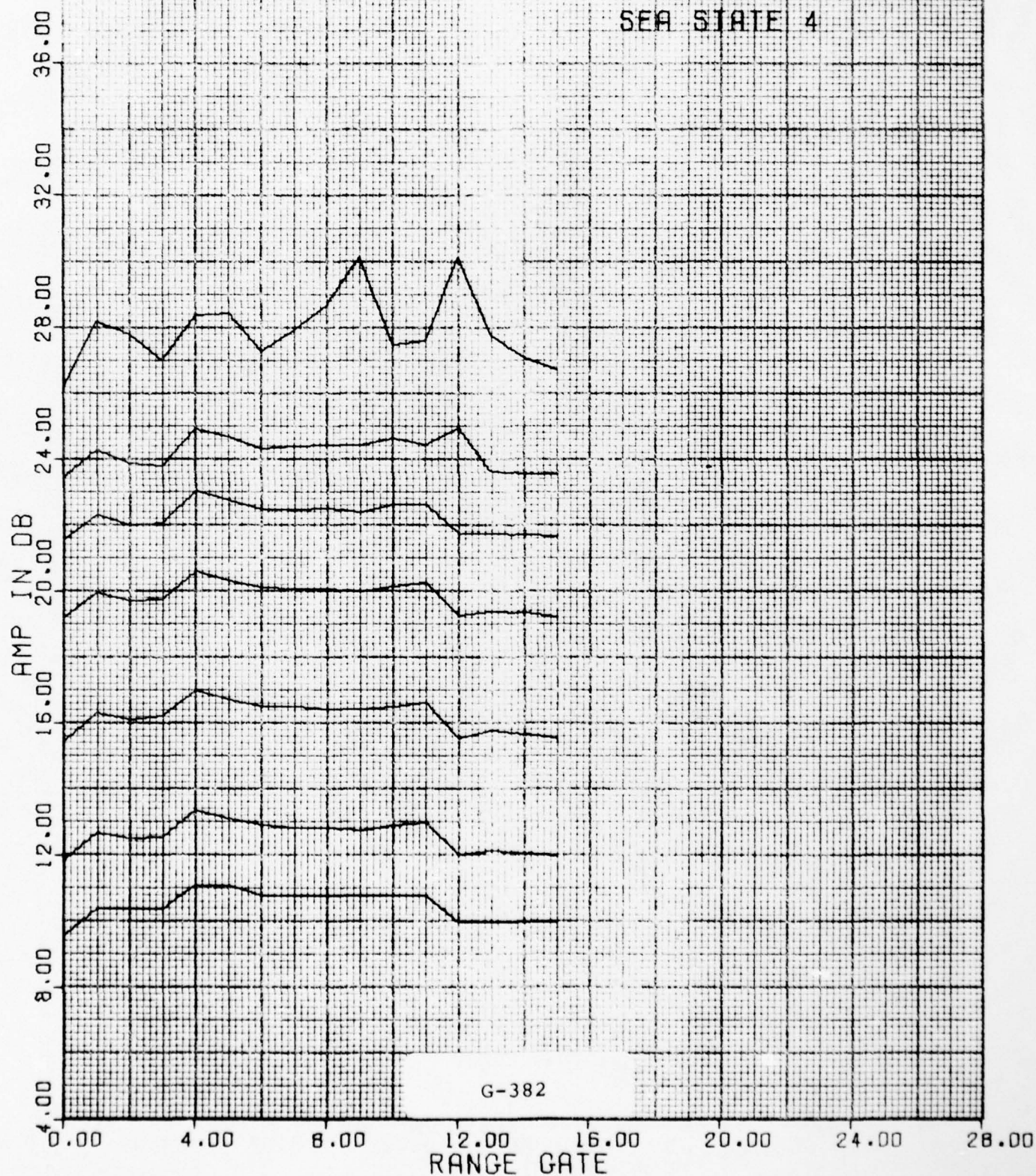
ABSOLUTE

RUN 7 FLT 17

ALT (KFT) 3.3

UP-WIND

SEA STATE 4



RG STATS

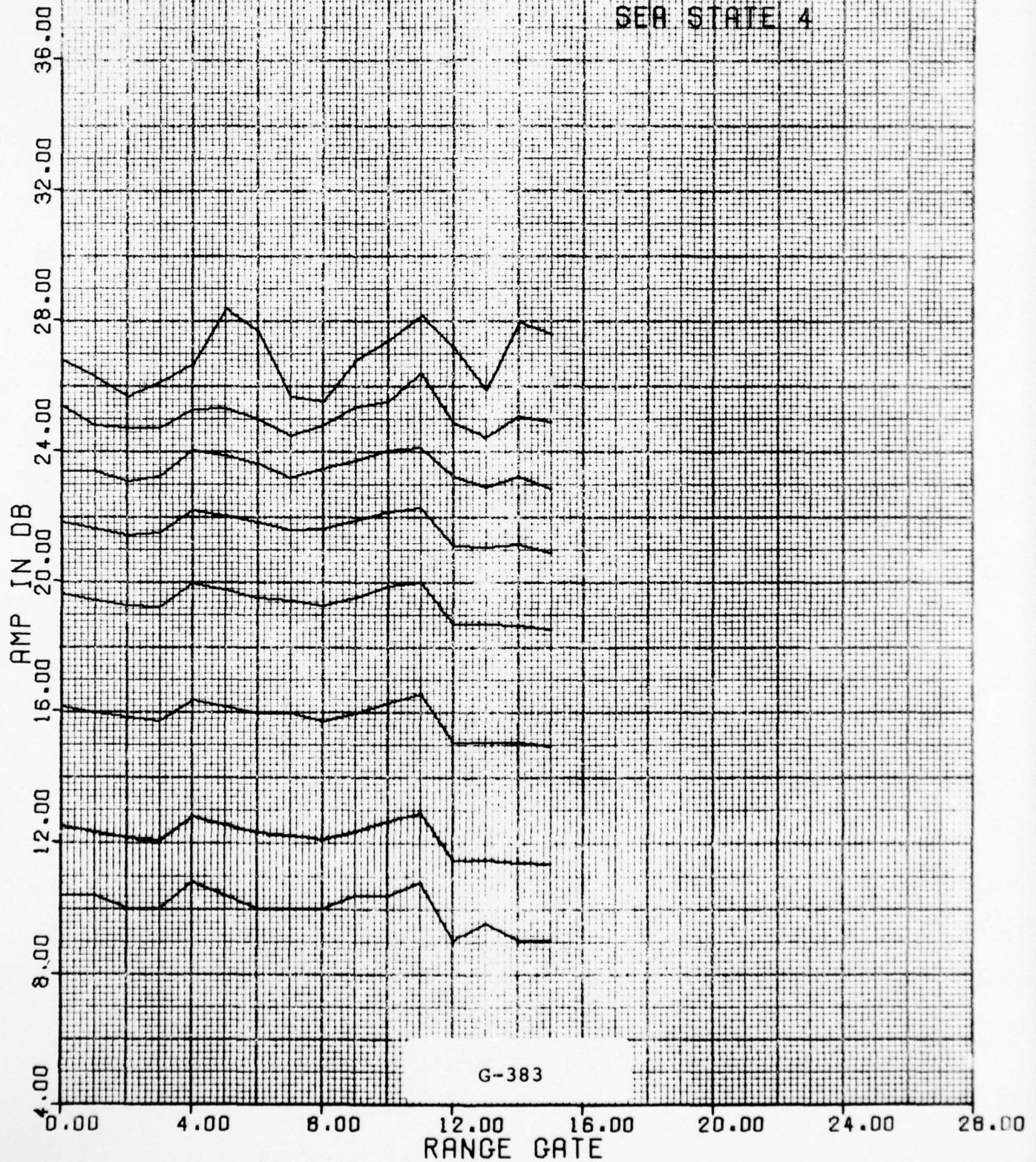
ABSOLUTE

RUN 8 ELT 37

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4



UNCLASSIFIED

1.3.4 Statistics versus Range Gate (Normalized)

These plots show a selection of statistical parameters as they vary between range gates. Theoretically known biases have been removed. The following statistical parameters are plotted in dB with respect to the mean from bottom to top on plot:

Median

Mean

10^{-1} point on Q curve

10^{-2} point on Q curve

10^{-3} point on Q curve

10^{-4} point on Q curve

10^{-5} point on Q curve (if sufficient data is available)

Maximum Value

The horizontal axis is range gate numbered from 0 thru 15.

RC STATUS

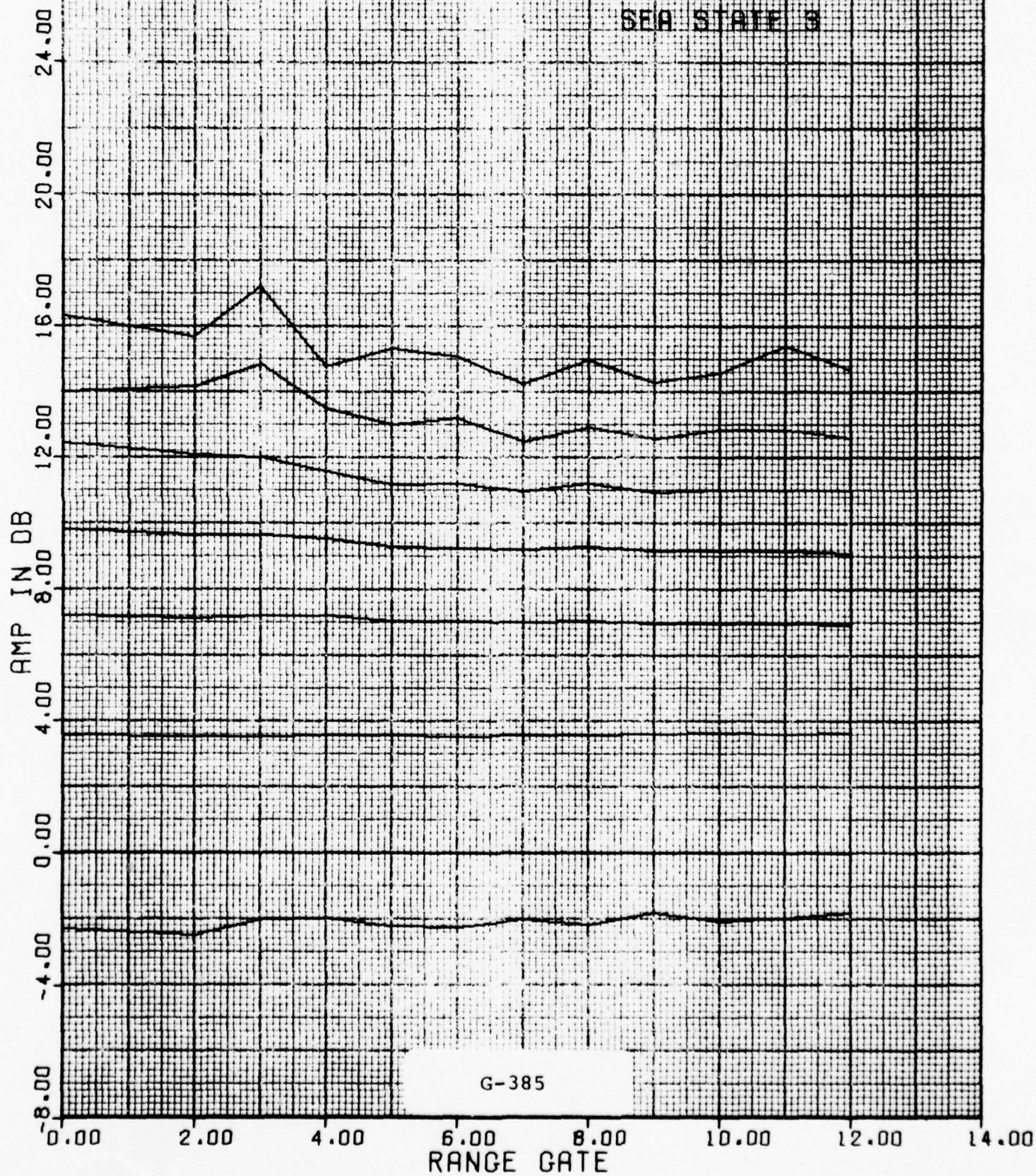
NORMALIZED

RUN 3 F.I. 4

ALT (KFT) 1.1

CROSS-WIND

SEA STATE 3



RG STATS

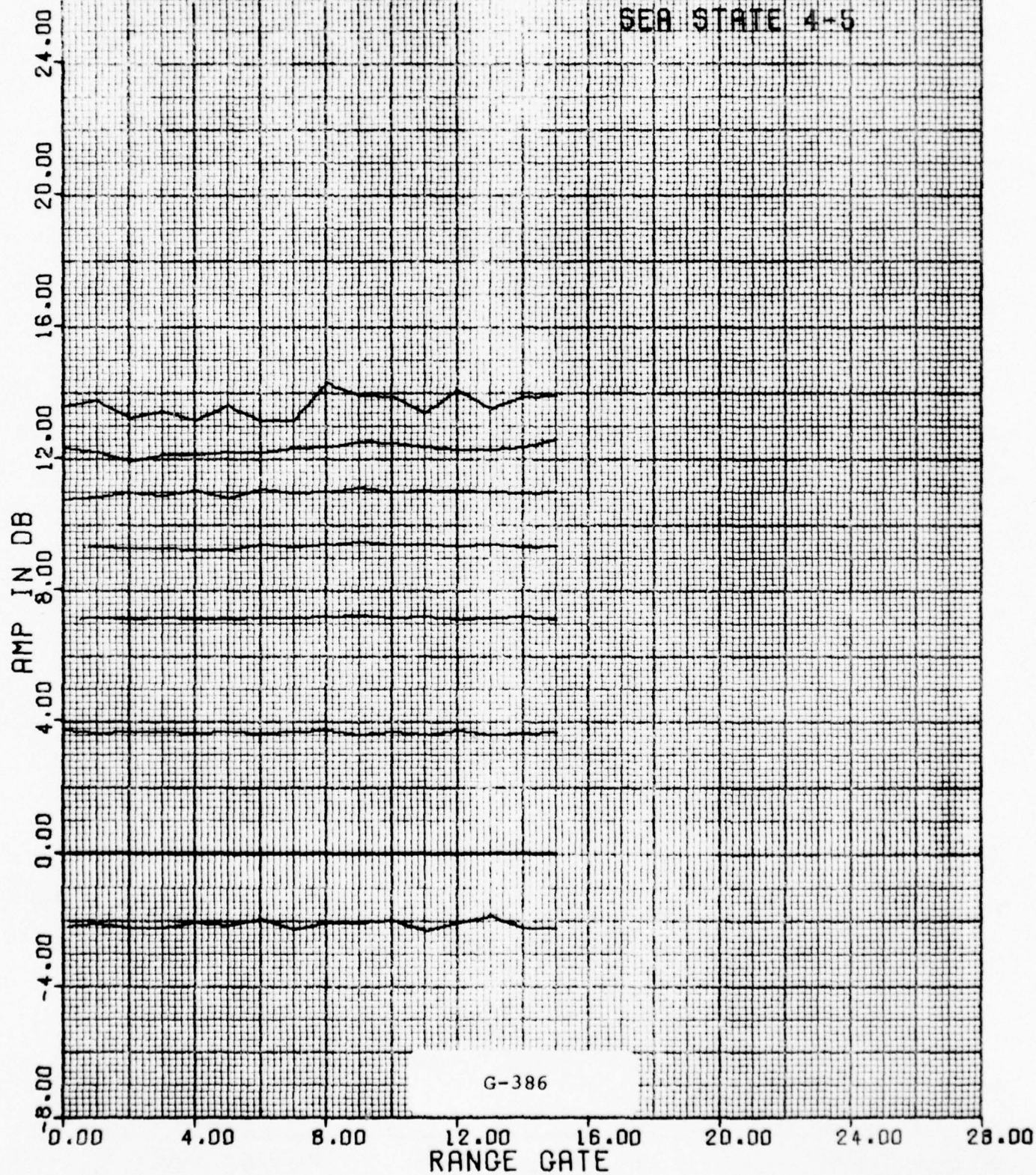
NORMALIZED

RUN 5 FLT 6

ALT (KFT) 2.2

DOWN-WIND

SEA STATE 4-5



RC STATS

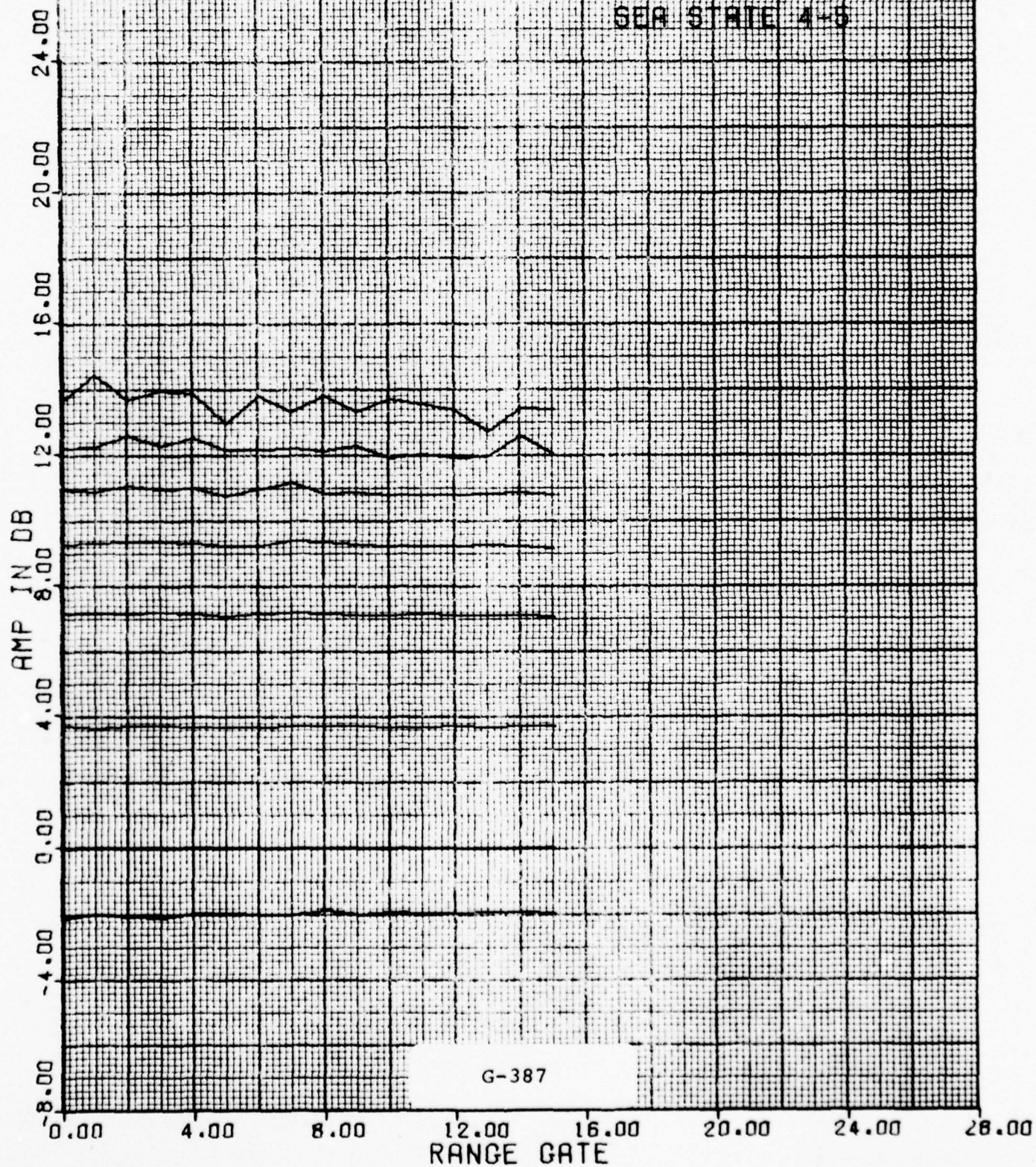
NORMALIZED

RUN 8 FLT 6

ALT (KFT) 3.3

DOWN-WIND

SEA STATE 4-5



RG STATS

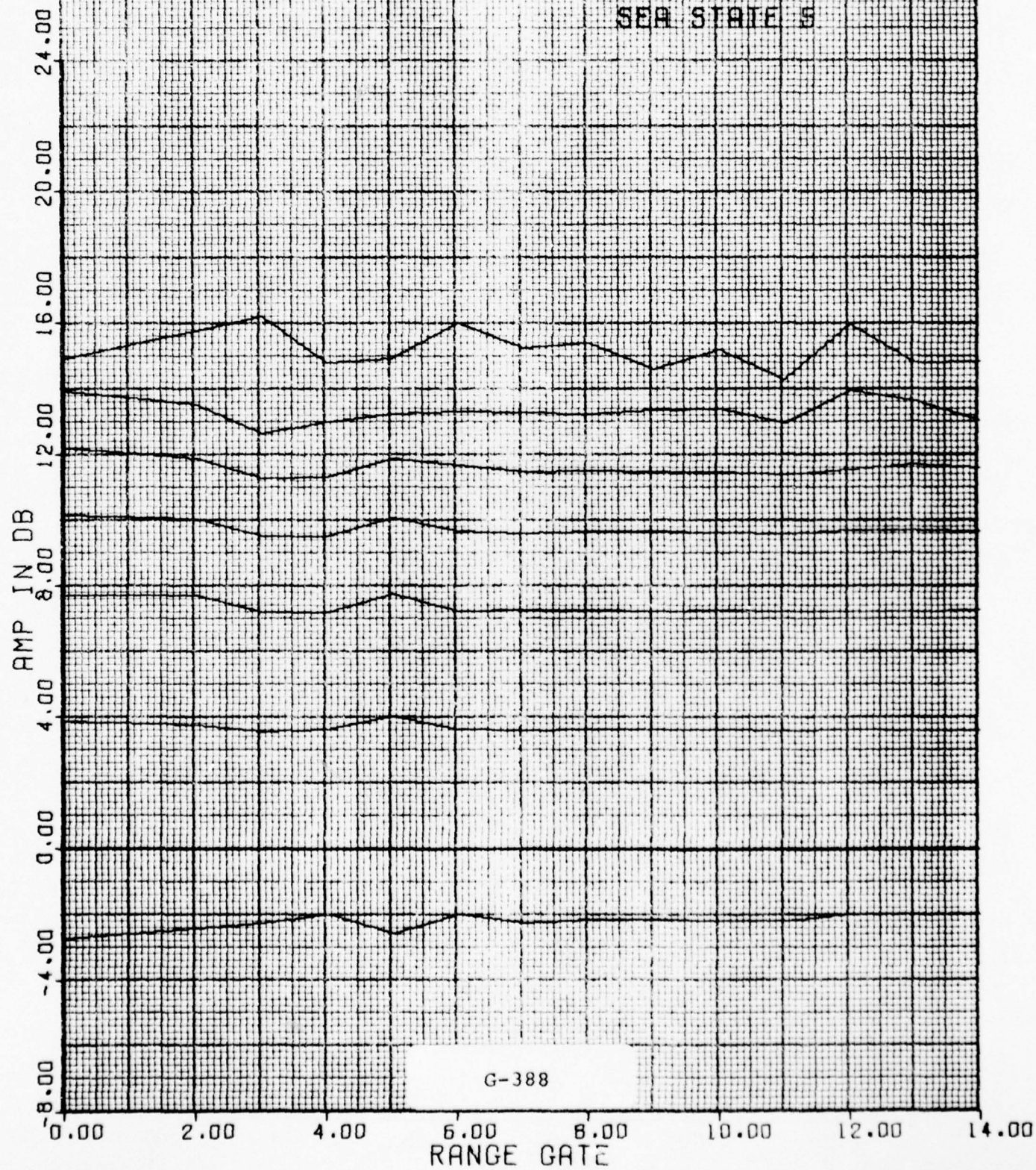
NORMALIZED

RUN 7 FLT 7

ALT (KFT) 3.3

UP-WIND

SEA STATE 5



RG STATS

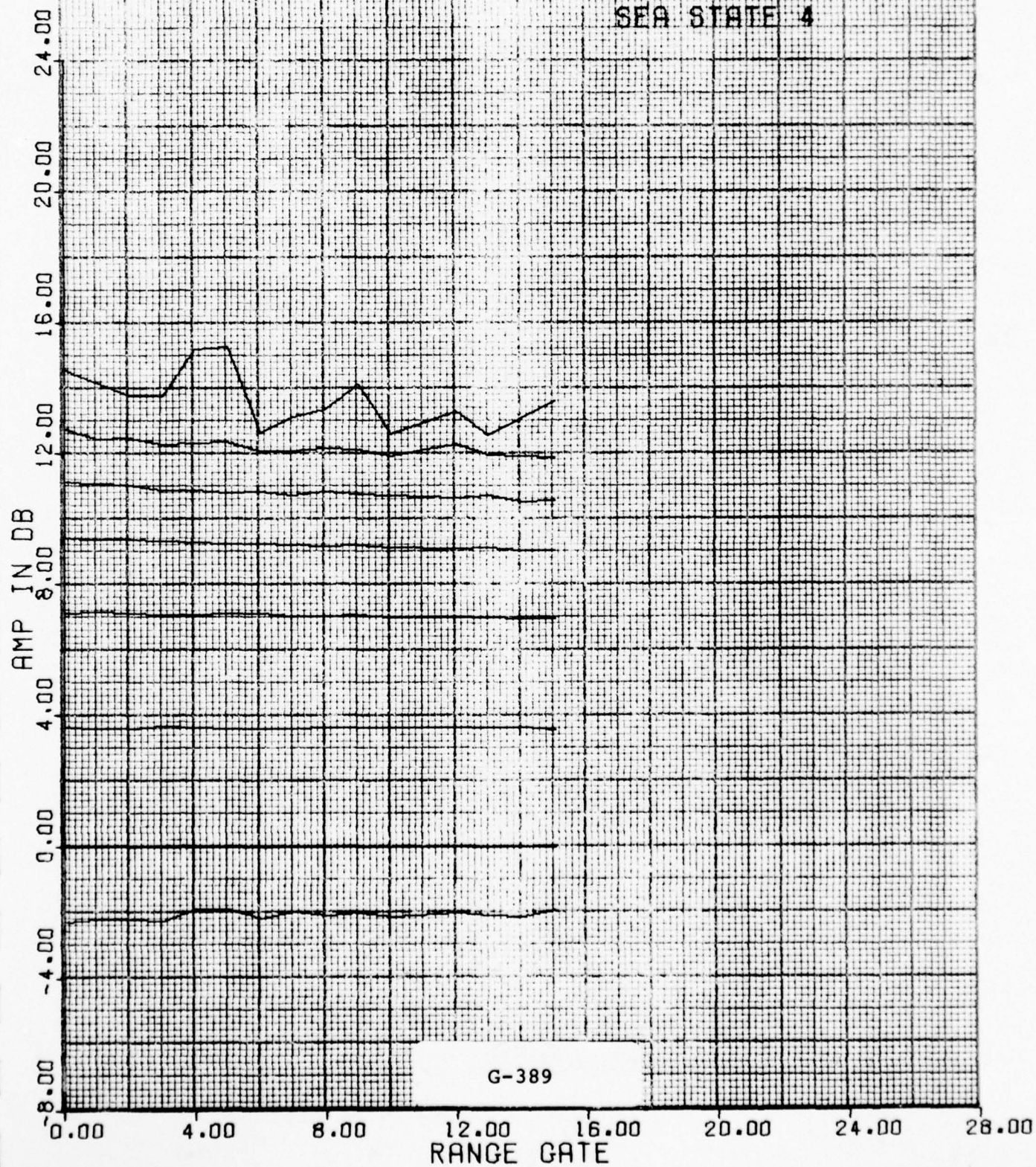
NORMALIZED

RUN 8 FLT 16

ALT (KFT) 2.2

CROSS-WIND

SEA STATE 4



UNCLASSIFIED

APPENDIX H OUTPUTS - HIT ANALYSIS

Hit analysis outputs are Hit Maps in Section 1.1, Hit Counts vs. Time in Section 1.2, and Conditional Probability Maps in Section 1.3. Section 1.2 is sub-divided into Fine Grain (Block Size = 20 FFT frames), Section 1.2.1 and Coarse (Block Size = 100 FFT frames), Section 1.2.2.

Selected conditional probability maps are included since many were almost identical in appearance. Detailed descriptions appear in Volume II, Section 9.

The Flight/Run Key ABCD used on all plots is interpreted as follows:

A = 0 for East Coast, 1 for West Coast
B = Flight Number
CD = Run Number (0 to 9 nominal)
Returns are labeled CD = 101, 102, etc.

UNCLASSIFIED

1.1 Hit Maps

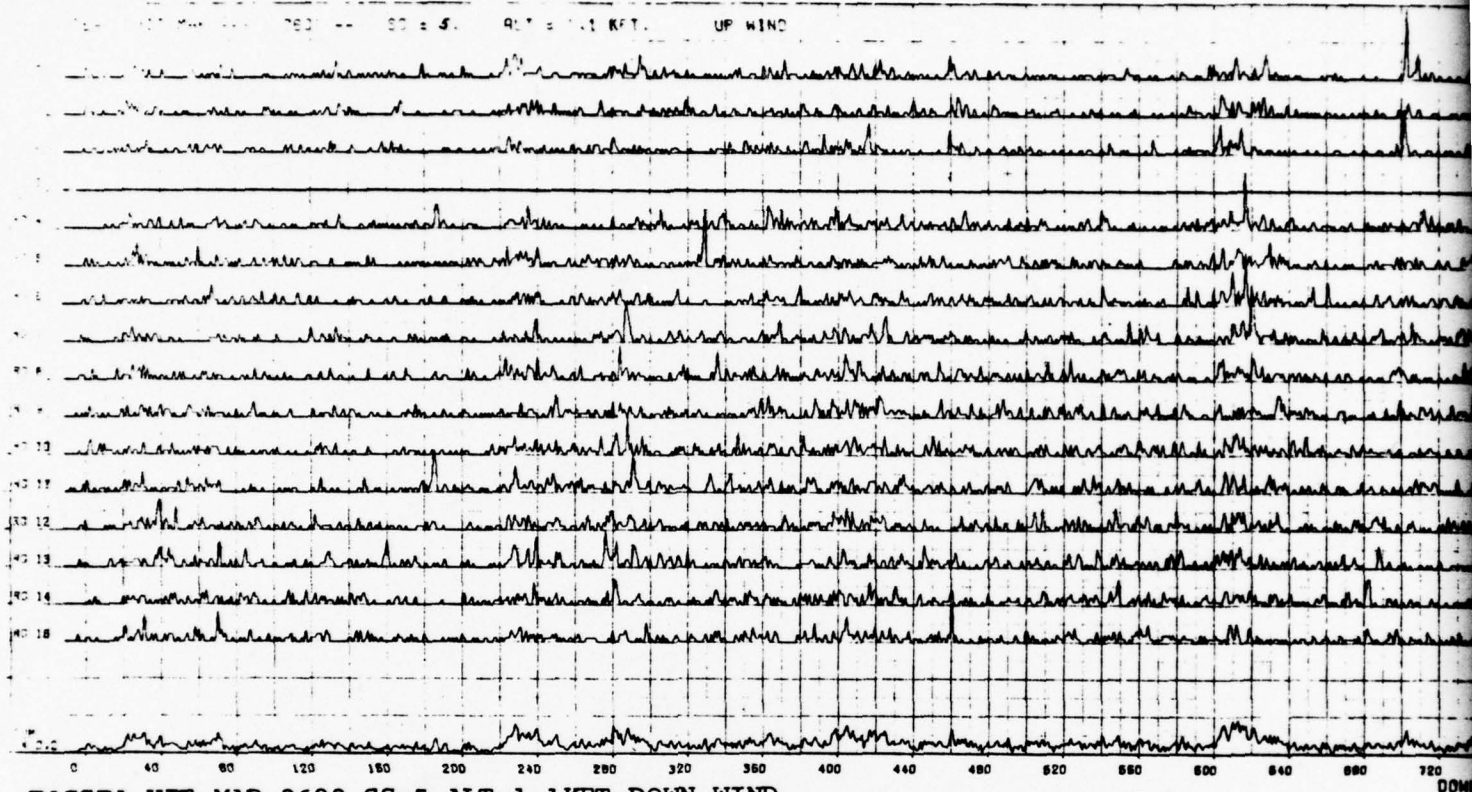
Hit maps are synthetic aperture maps of sea clutter echoes exceeding a nominal 10^{-3} threshold. Results are plotted in a cross-range vs. down-range coordinate system. Hits (ten per major division) are plotted for each range gate (cross-range) on the ordinate. Down-range is on the abscissa in 100's of feet. The sum over all range gates at the bottom of the graph is scaled at 50 hits per major division, or 5 hits for the smallest division. Velocity was 420 ft/sec for all flights except six on the east coast. Velocity values used for Flight 6 processing are listed in Table H-1.

TABLE H-1
FLIGHT 6 VELOCITY VALUES USED FOR HIT MAP ANALYSIS*

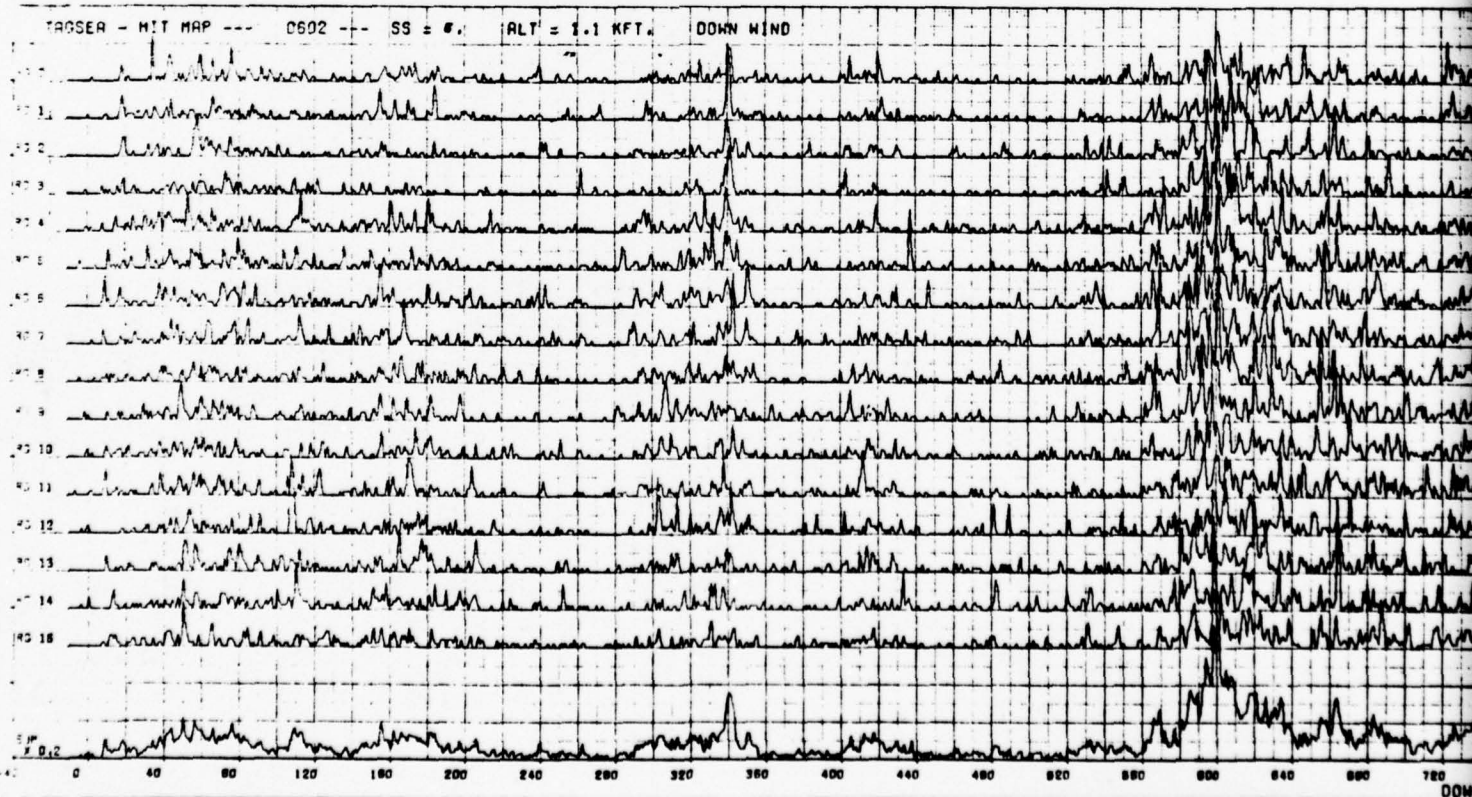
<u>Flight/Run</u>	<u>Velocity(ft/sec)</u>
0601	470
0602	430
0603	439
0604	459
0605	430
0606	436
0607	474
0608	486
0609	436

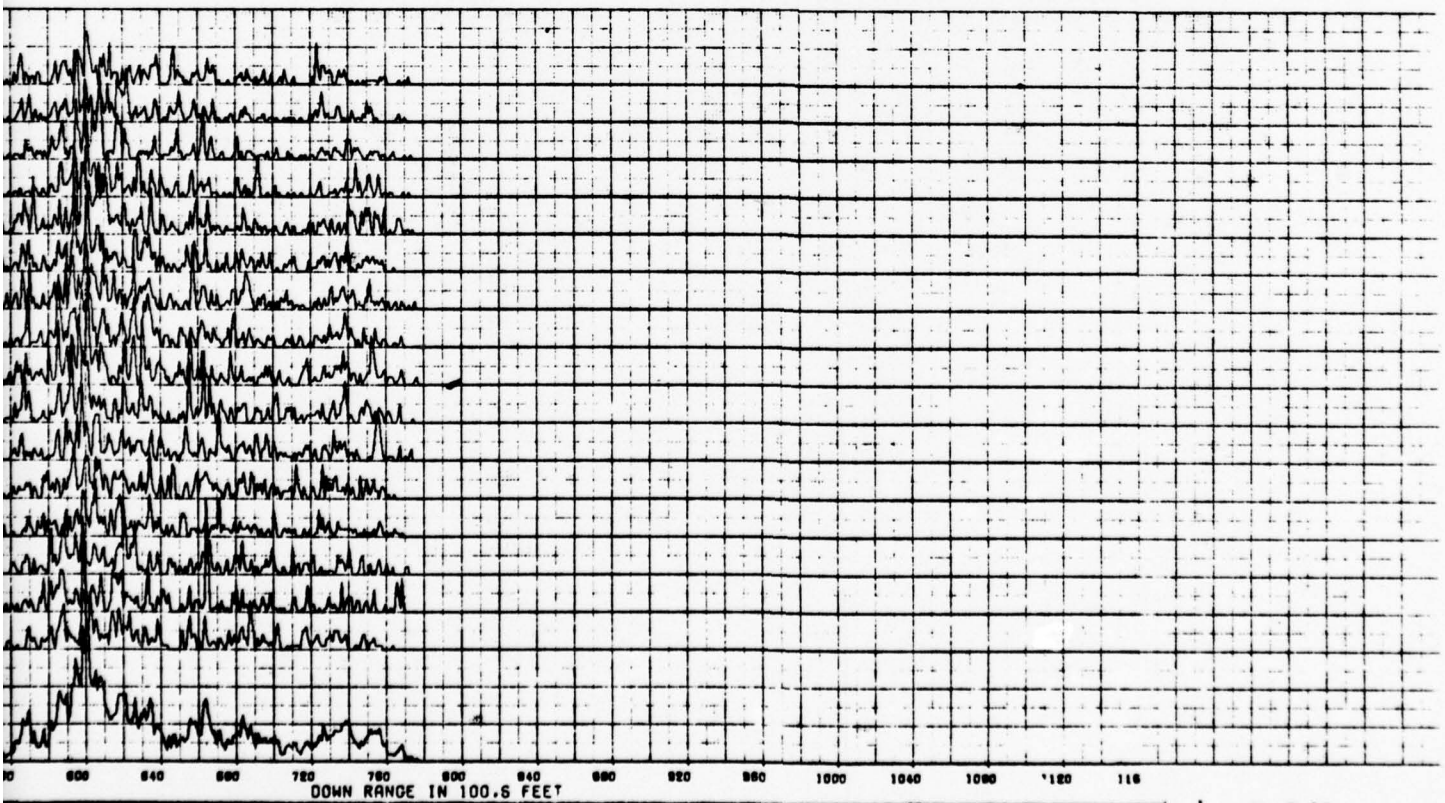
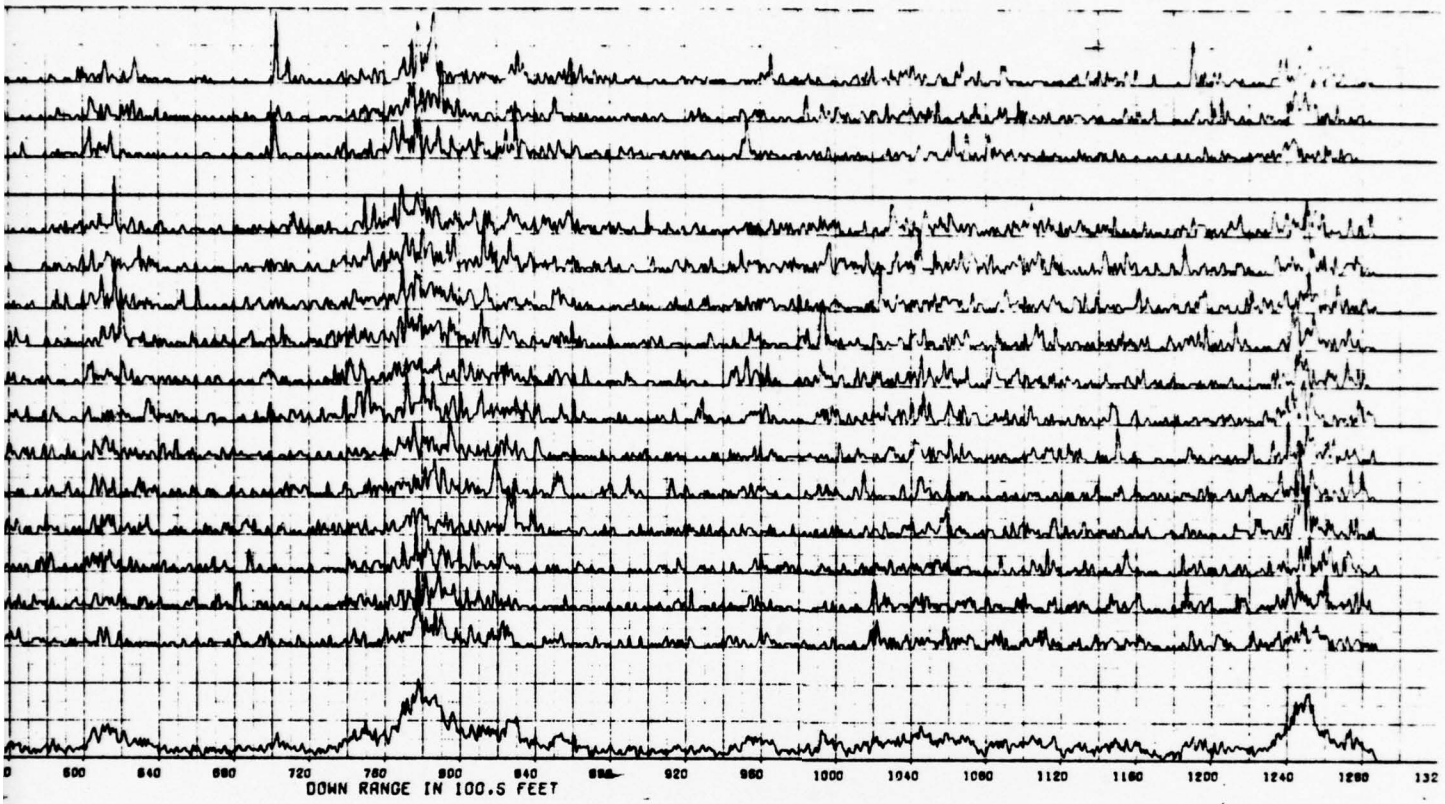
* Velocity values were obtained from doppler versus time plots run in data reduction.

TAGSEA HIT MAP-0601-SS=5,ALT=1.1KFT UP WIND



TAGSEA HIT MAP-0602-SS=5,ALT=1.1KFT DOWN WIND

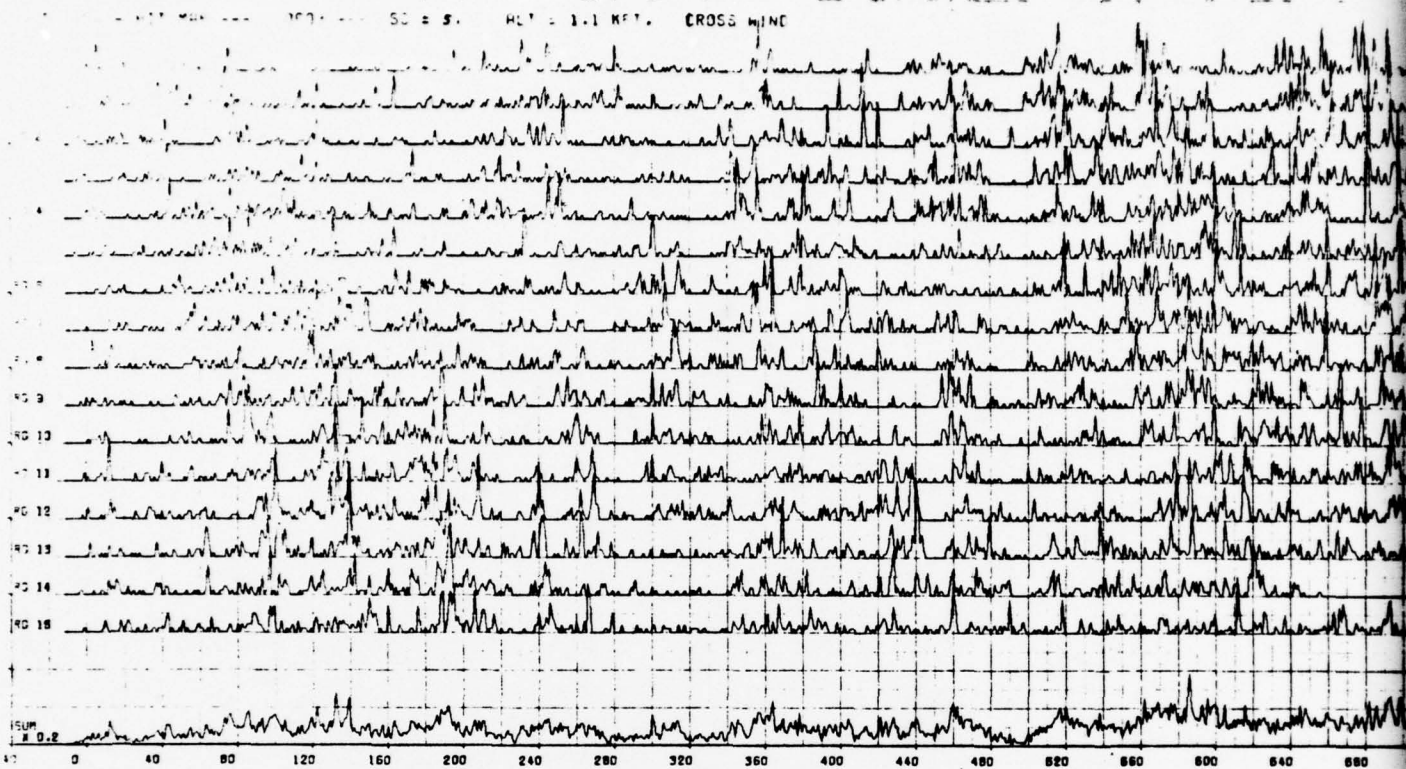




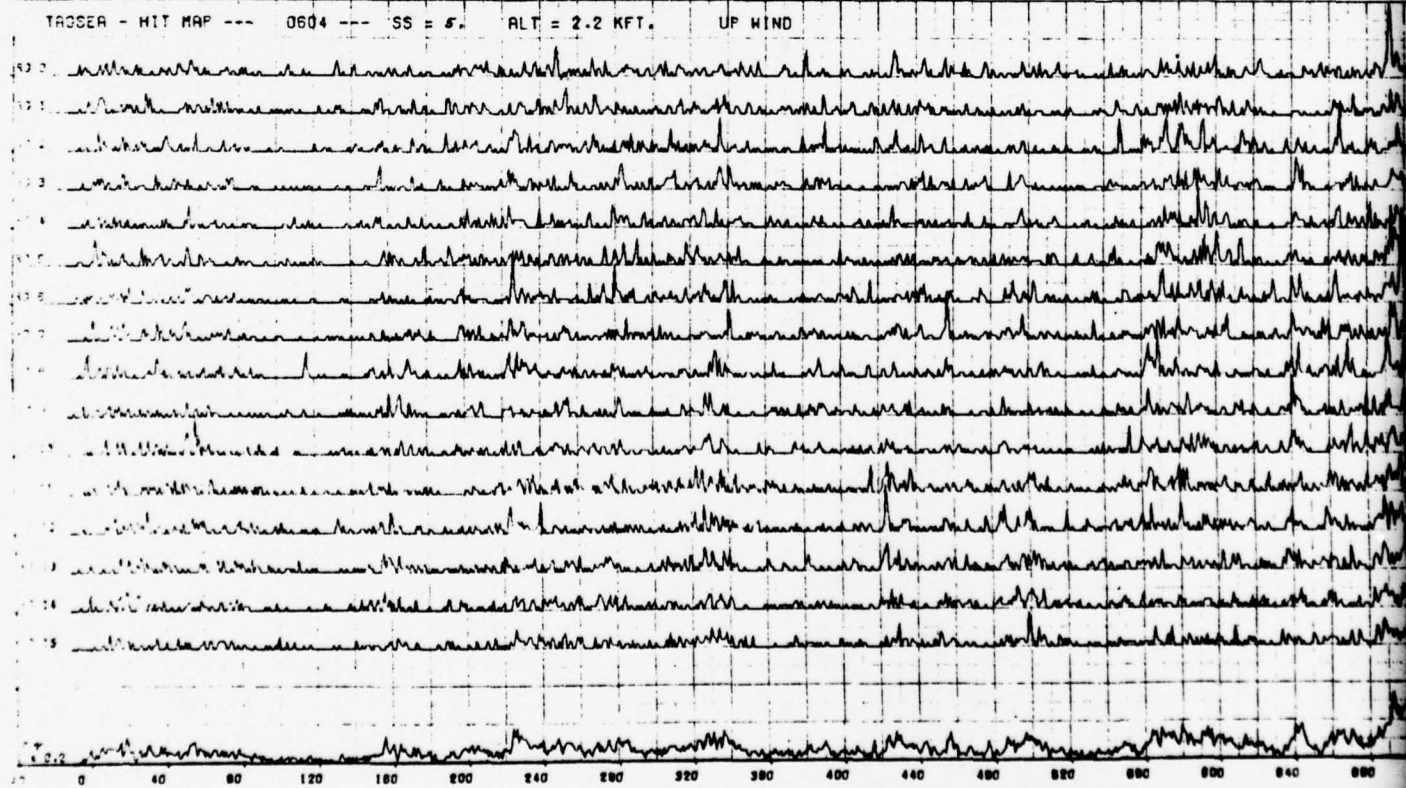
H-3/4

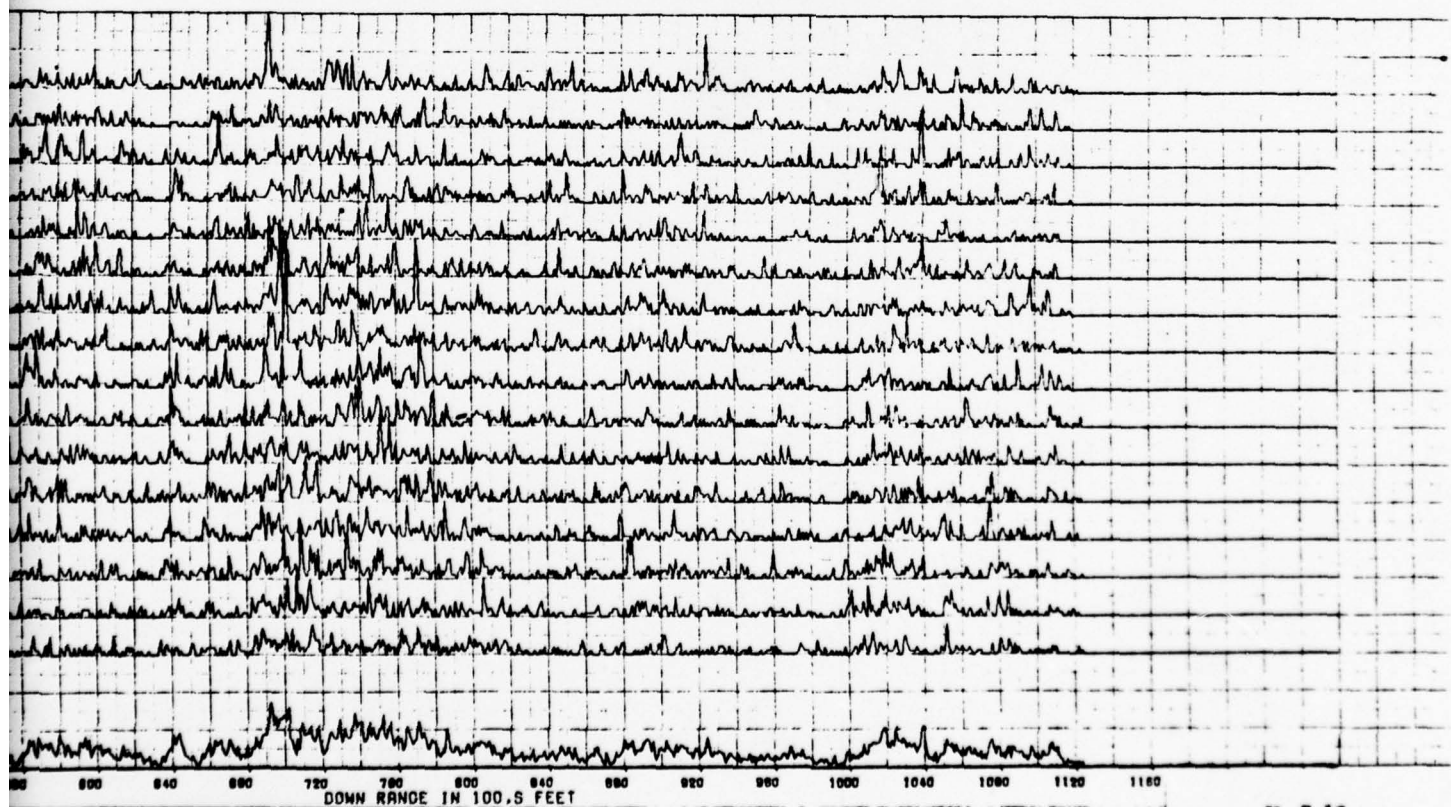
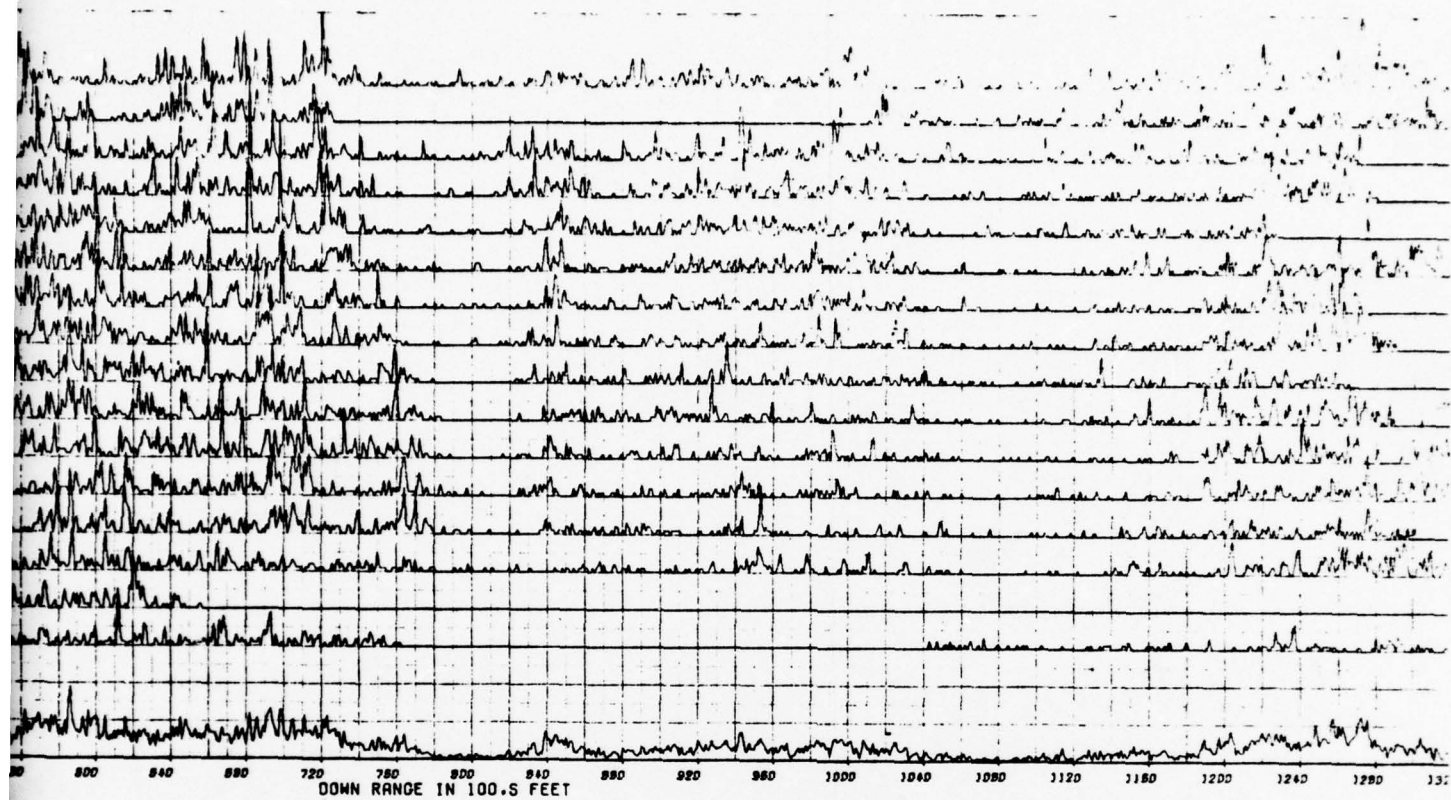
2

TAGSEA HIT MAP-0603-SS=5,ALT=1.1KFT CROSS WIND



TAGSEA HIT MAP-0604-SS=5,ALT=2.2KFT UP WIND

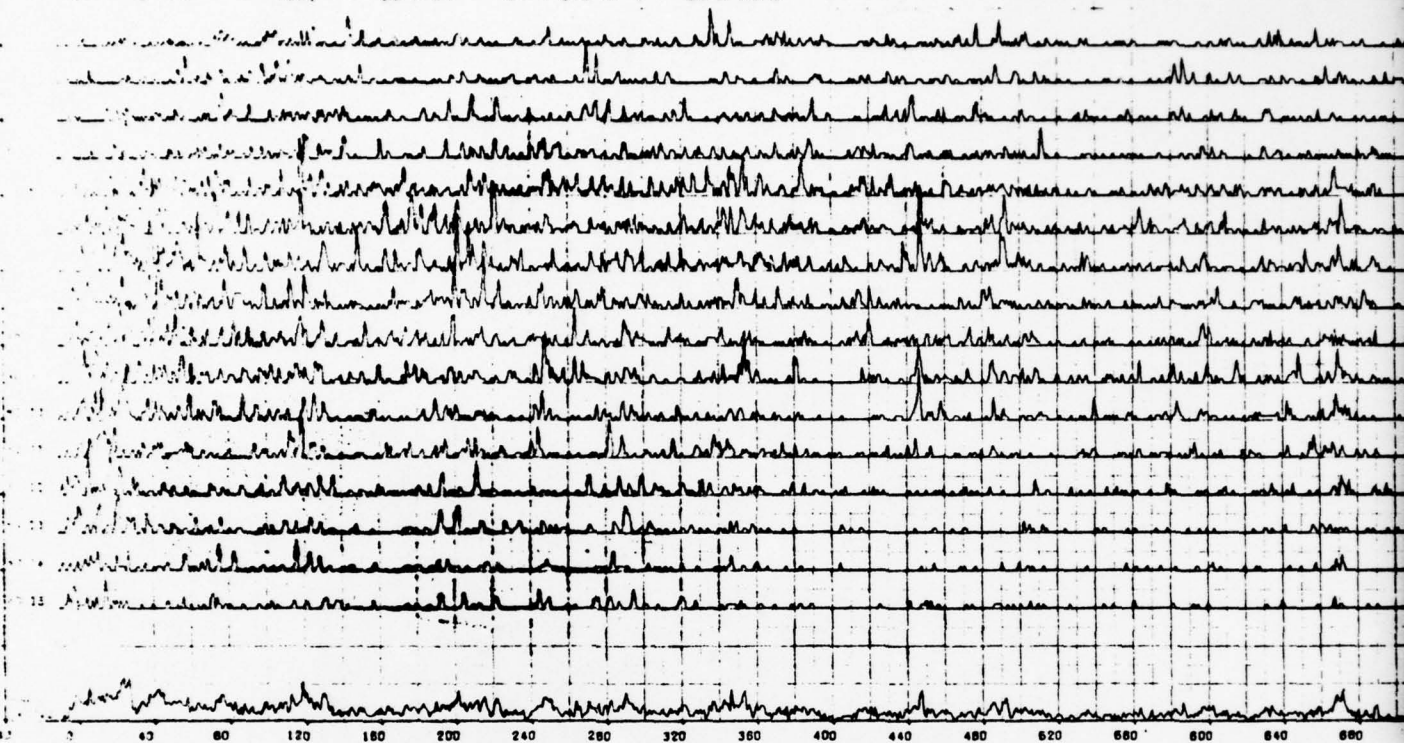




H-5/6

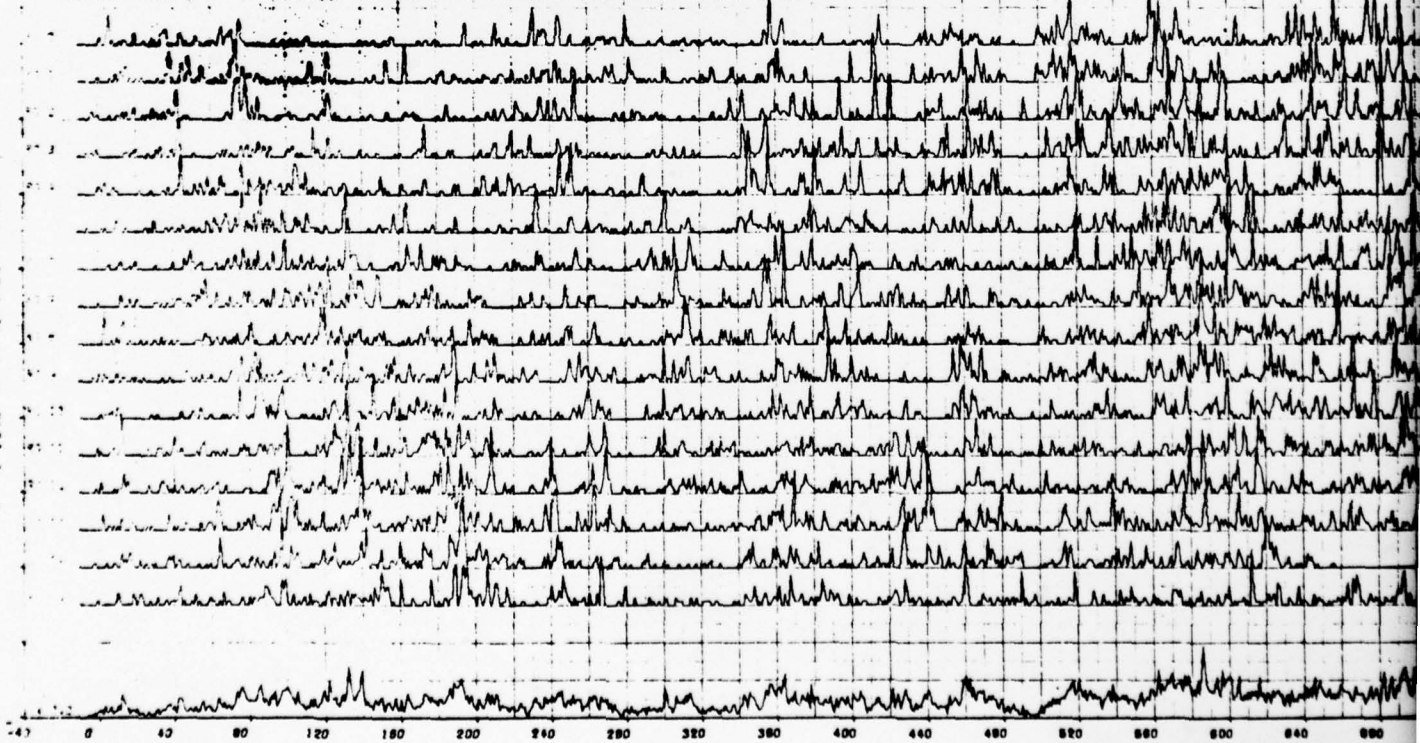
TAGSEA HIT MAP-0605-SS=5, ALT=2.2KFT DOWN WIND

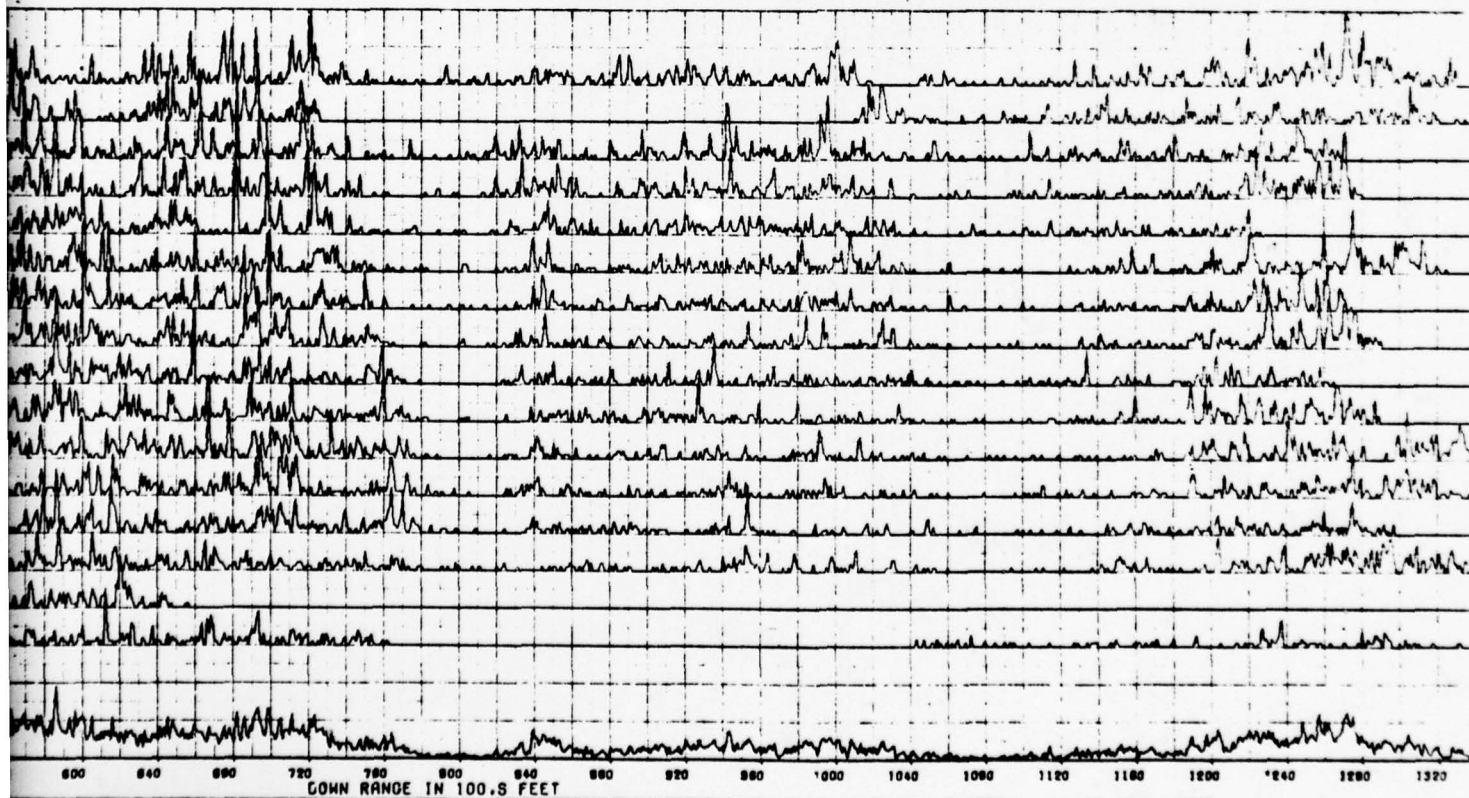
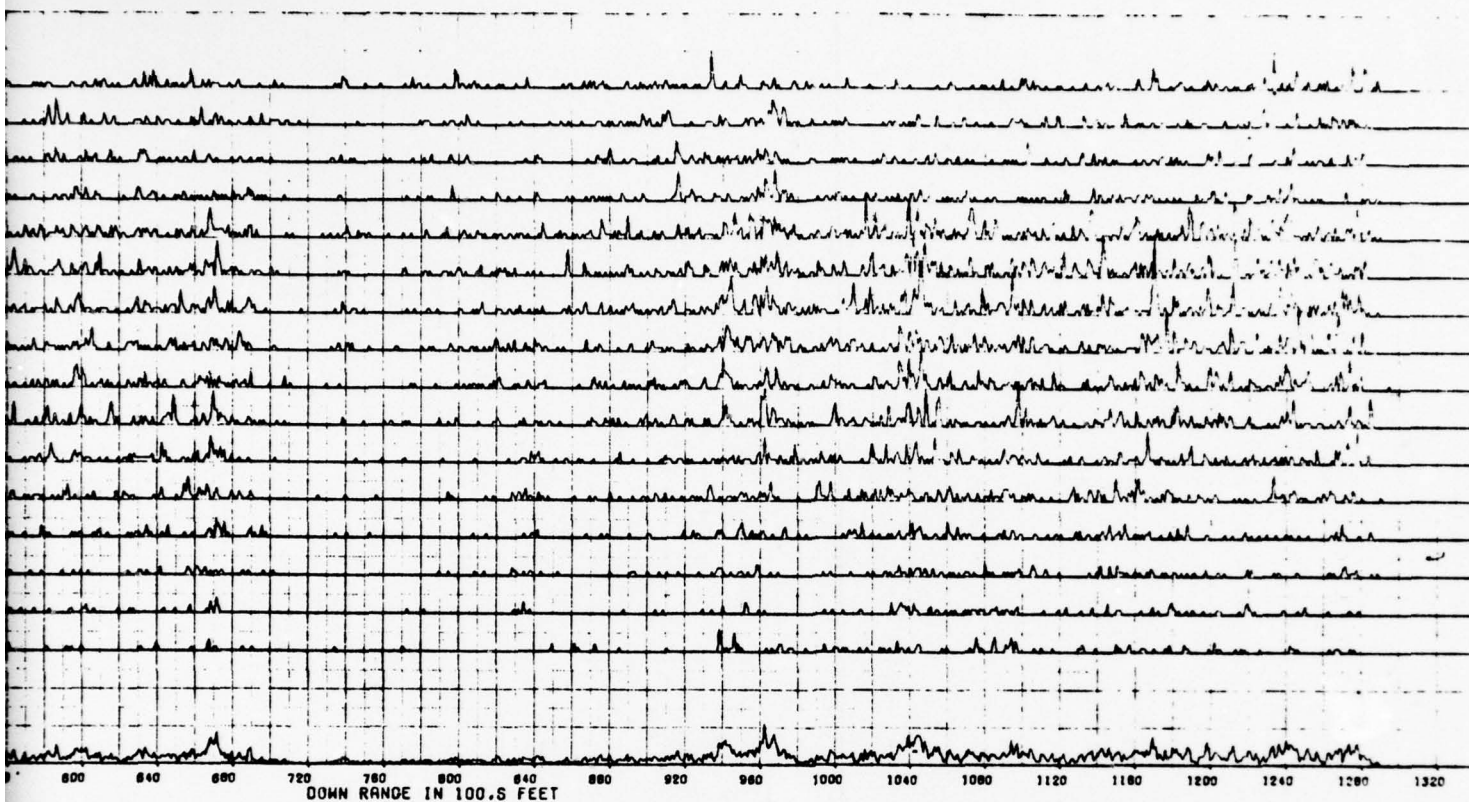
0605 --- SS = 5. ALT = 2.2 KFT. DOWN WIND



TAGSEA HIT MAP-0606-SS=5, ALT=2.2KFT CROSS WIND

0606 --- SS = 5. ALT = 2.2 KFT. CROSS WIND

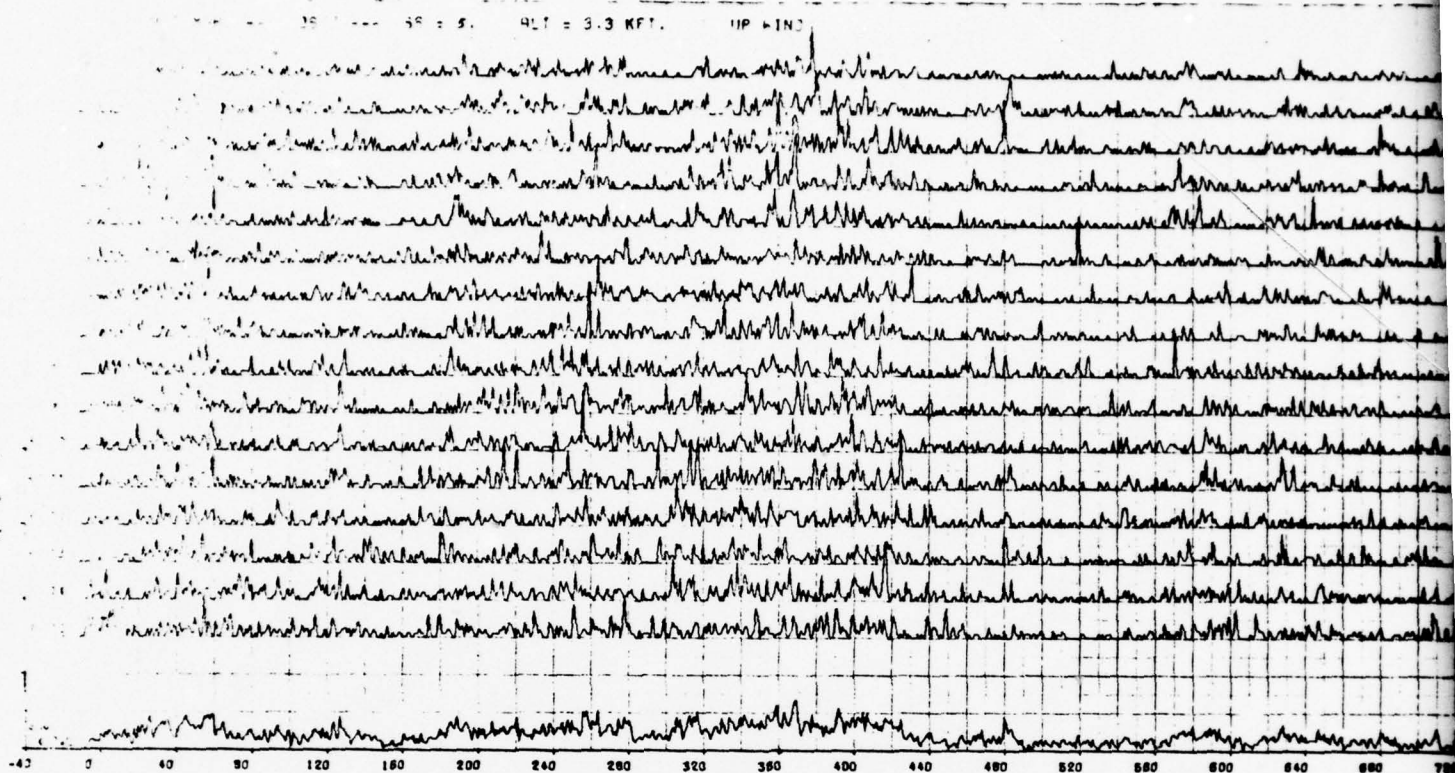




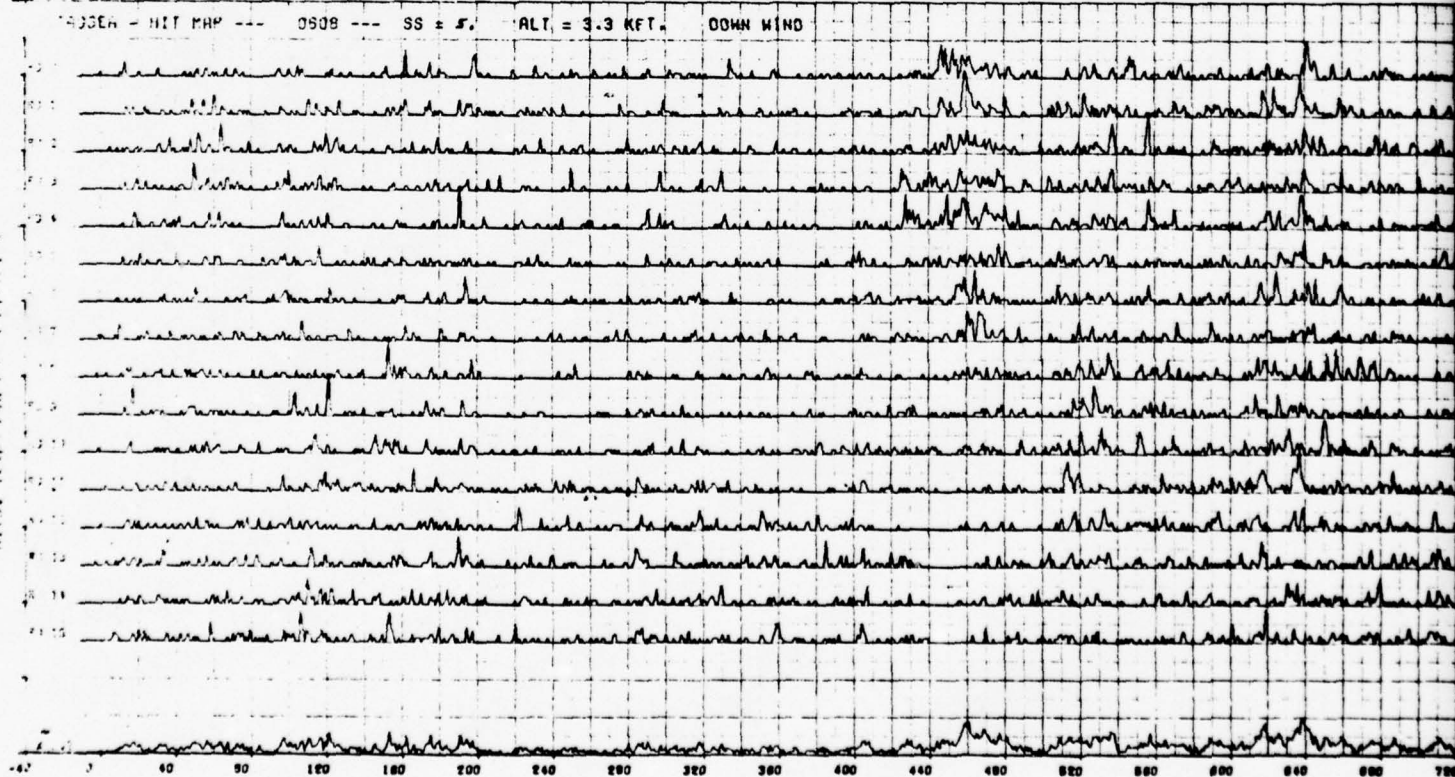
H-7/8

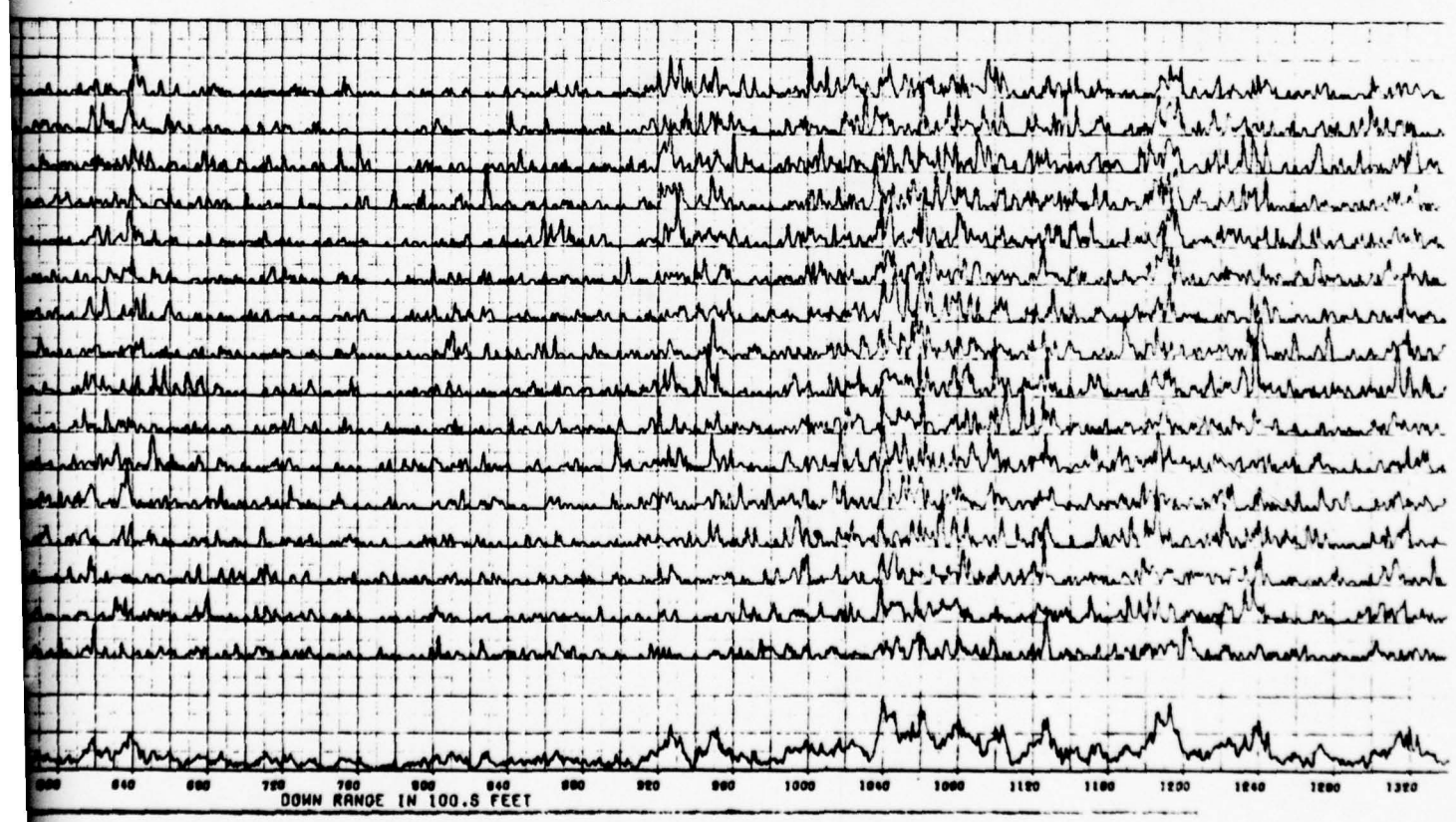
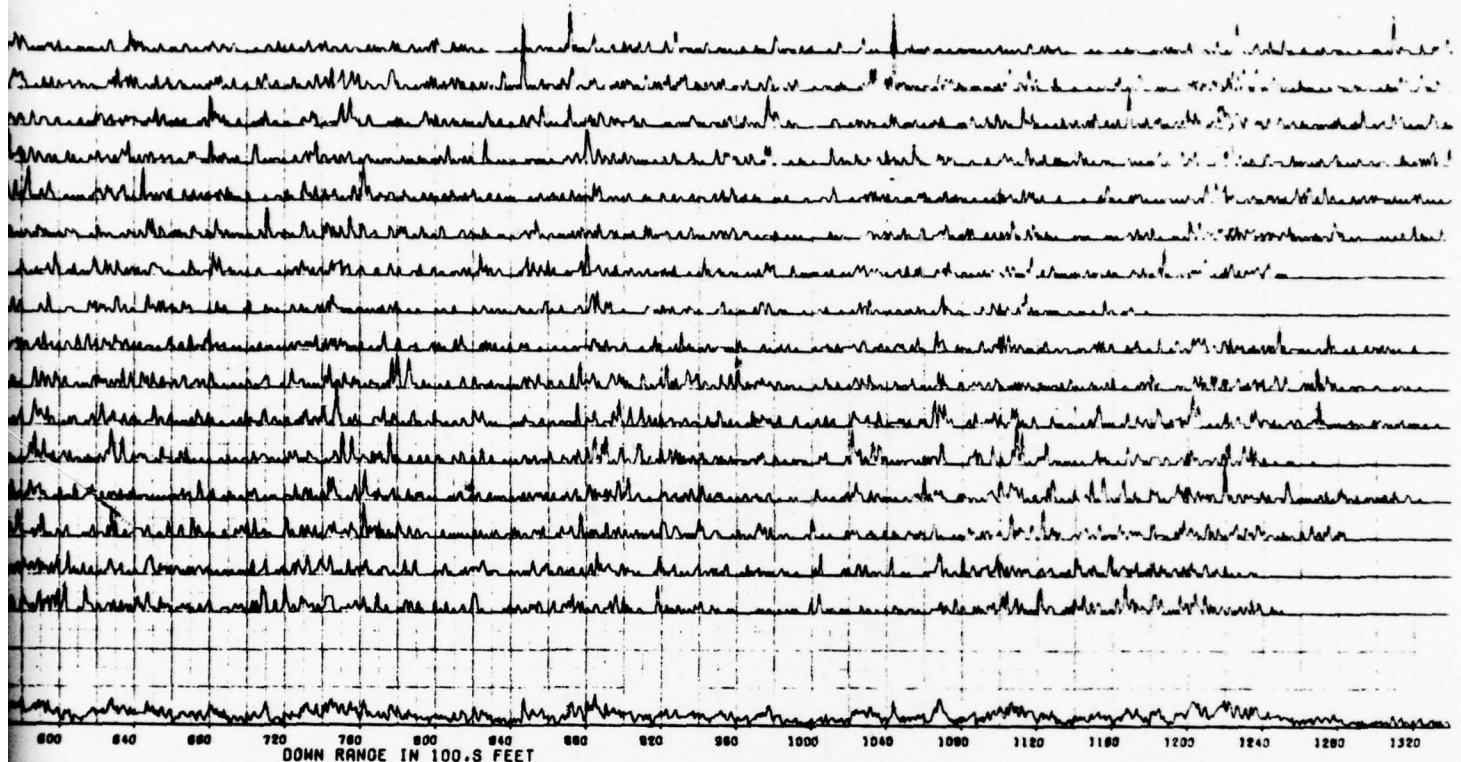
2

TAGSEA HIT MAP-0607-SS=5, ALT=3.3KFT UP WIND



TAGSEA HIT MAP-0608-SS=5, ALT=3.3KFT DOWN WIND

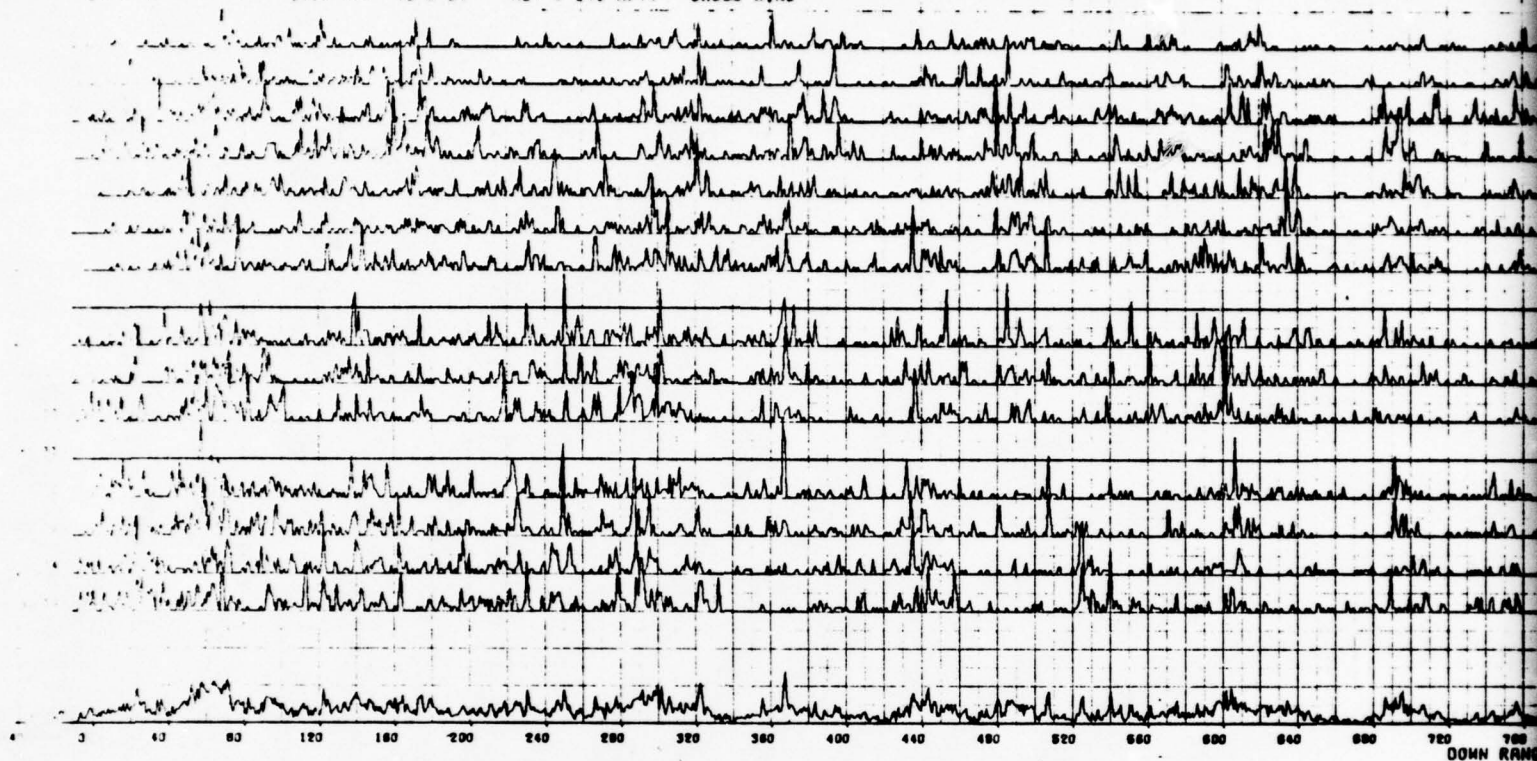




2

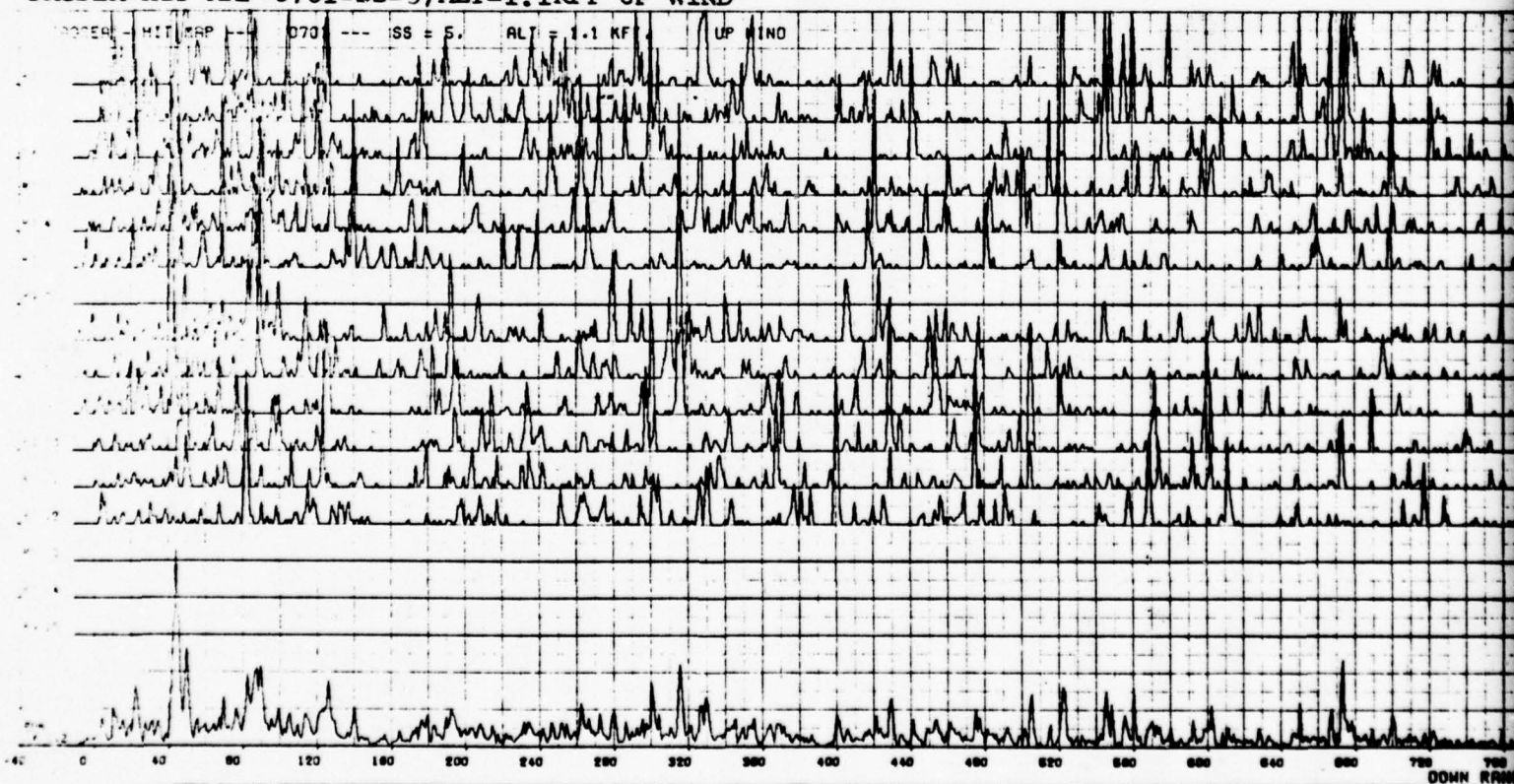
TAGSEA HIT MAP-0609-SS=5,ALT=3.3KFT CROSS WIND

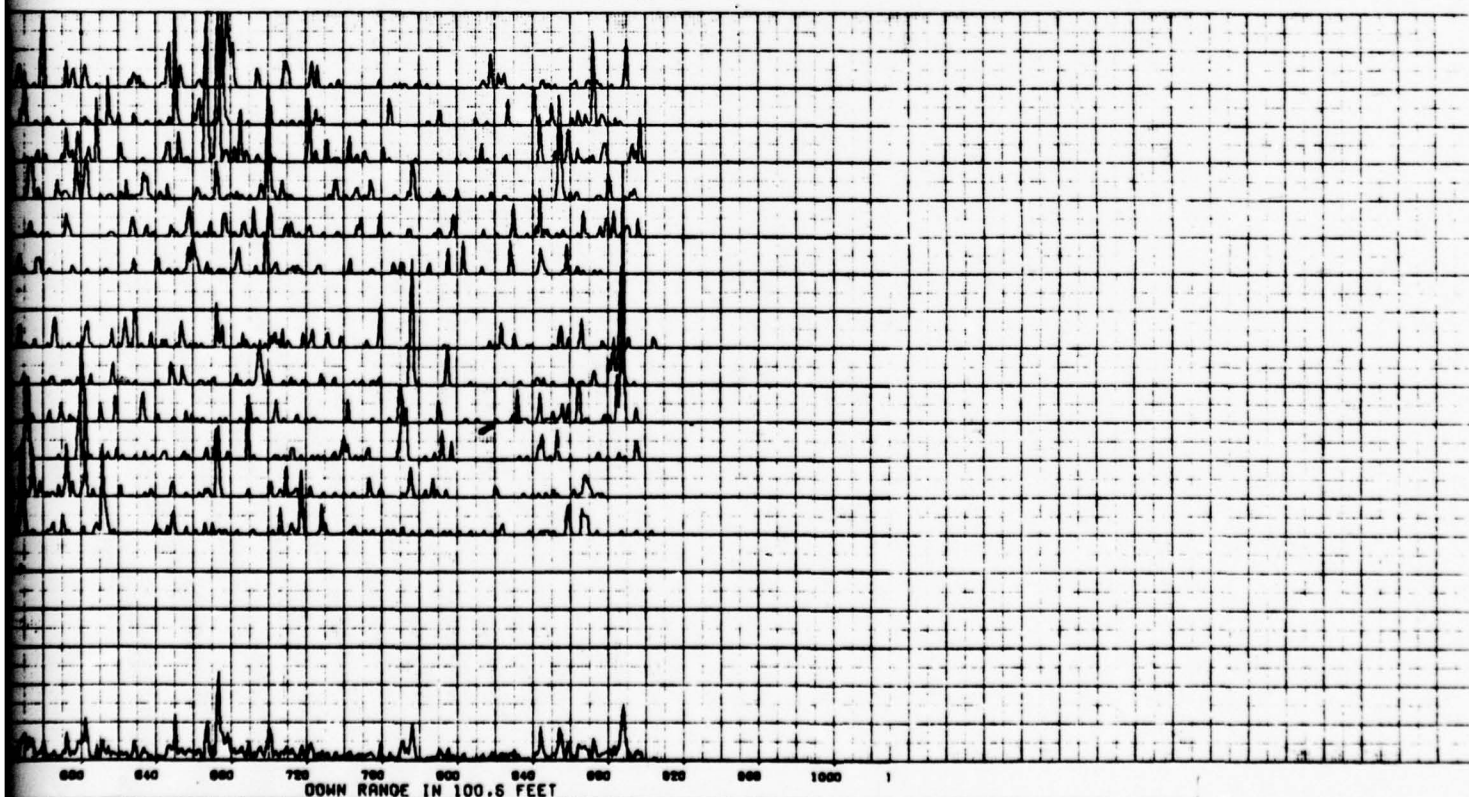
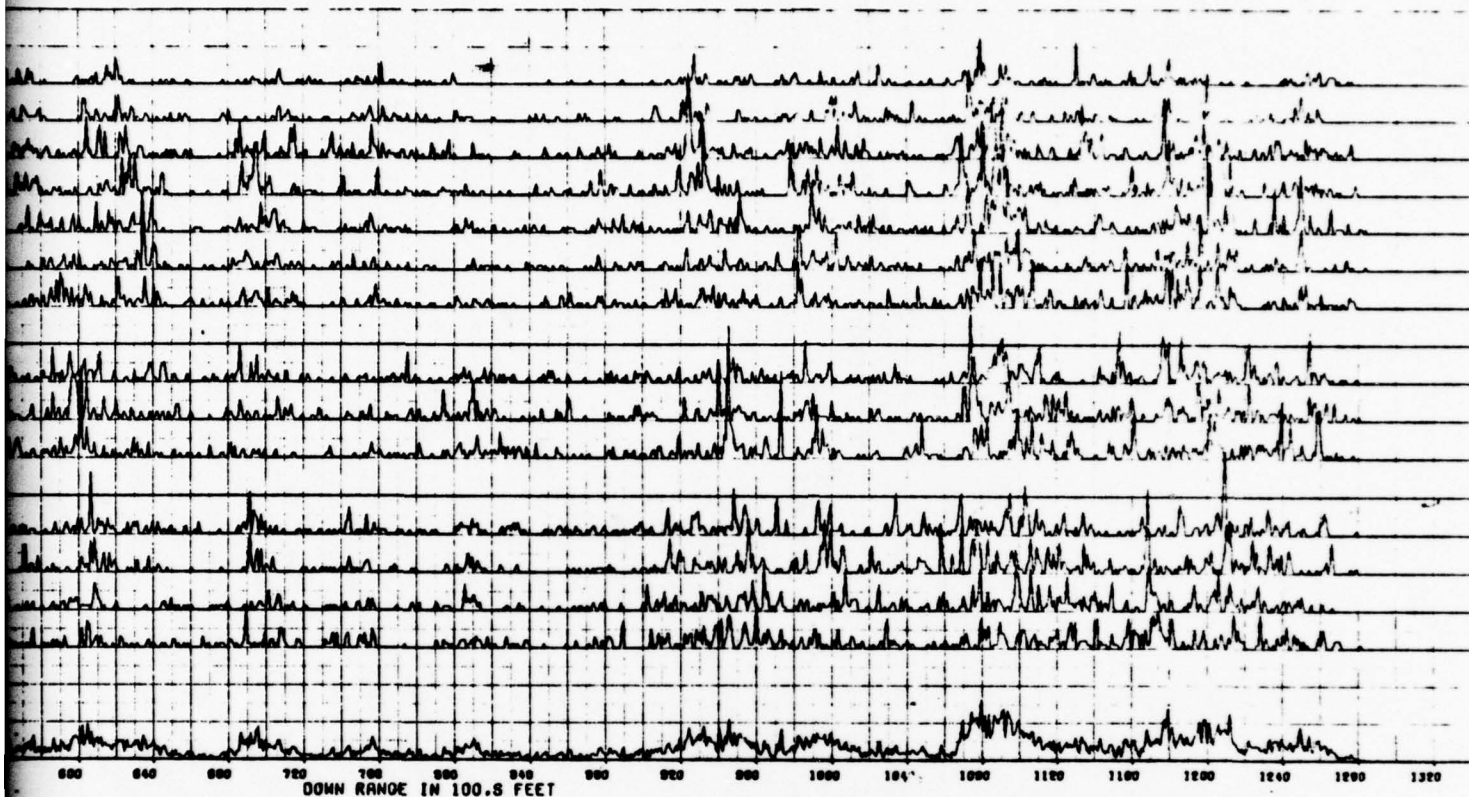
SS = 5. ALT = 3.3 KFT. CROSS WIND



TAGSEA HIT MAP-0701-SS=5,ALT=1.1KFT UP WIND

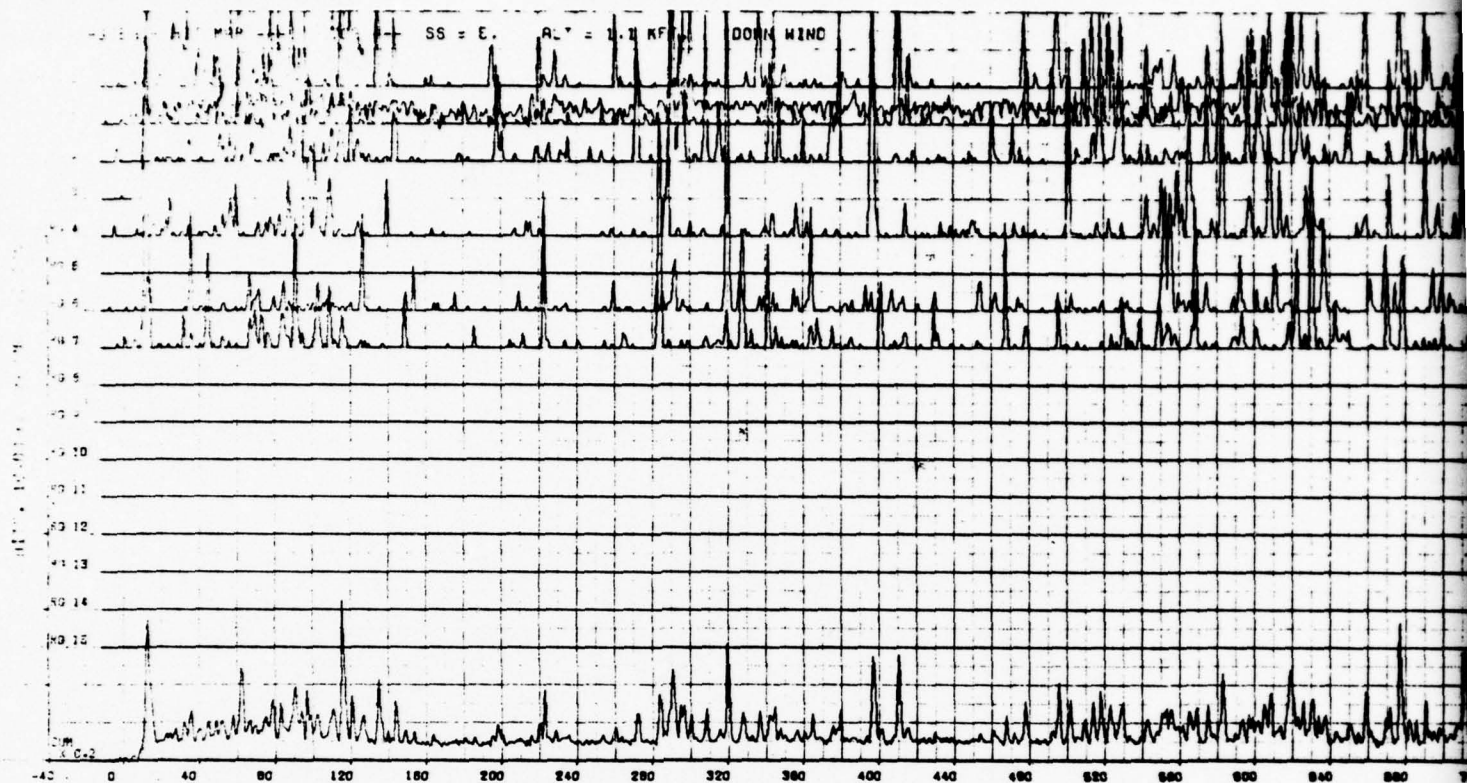
SS = 5. ALT = 1.1 KFT. UP WIND



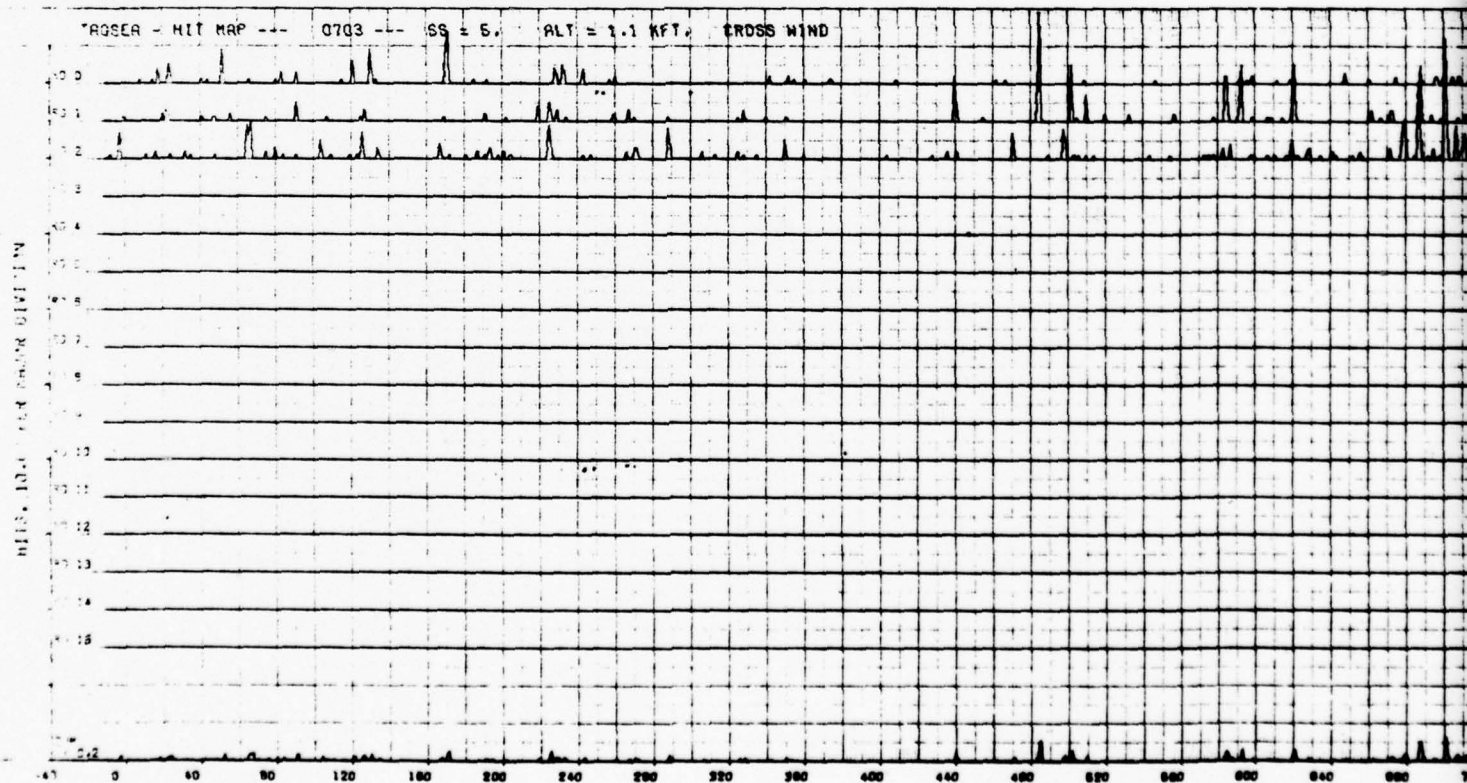


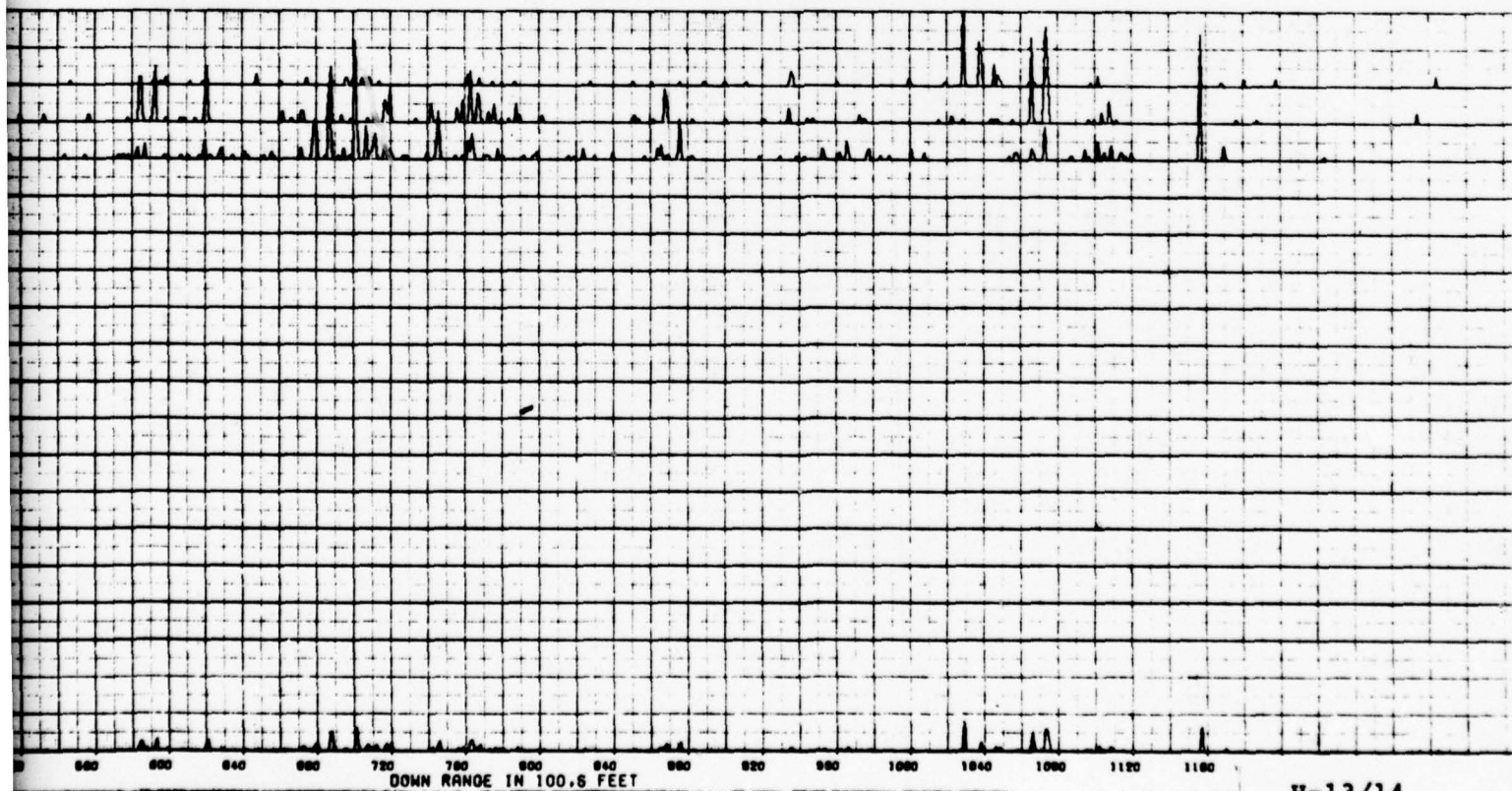
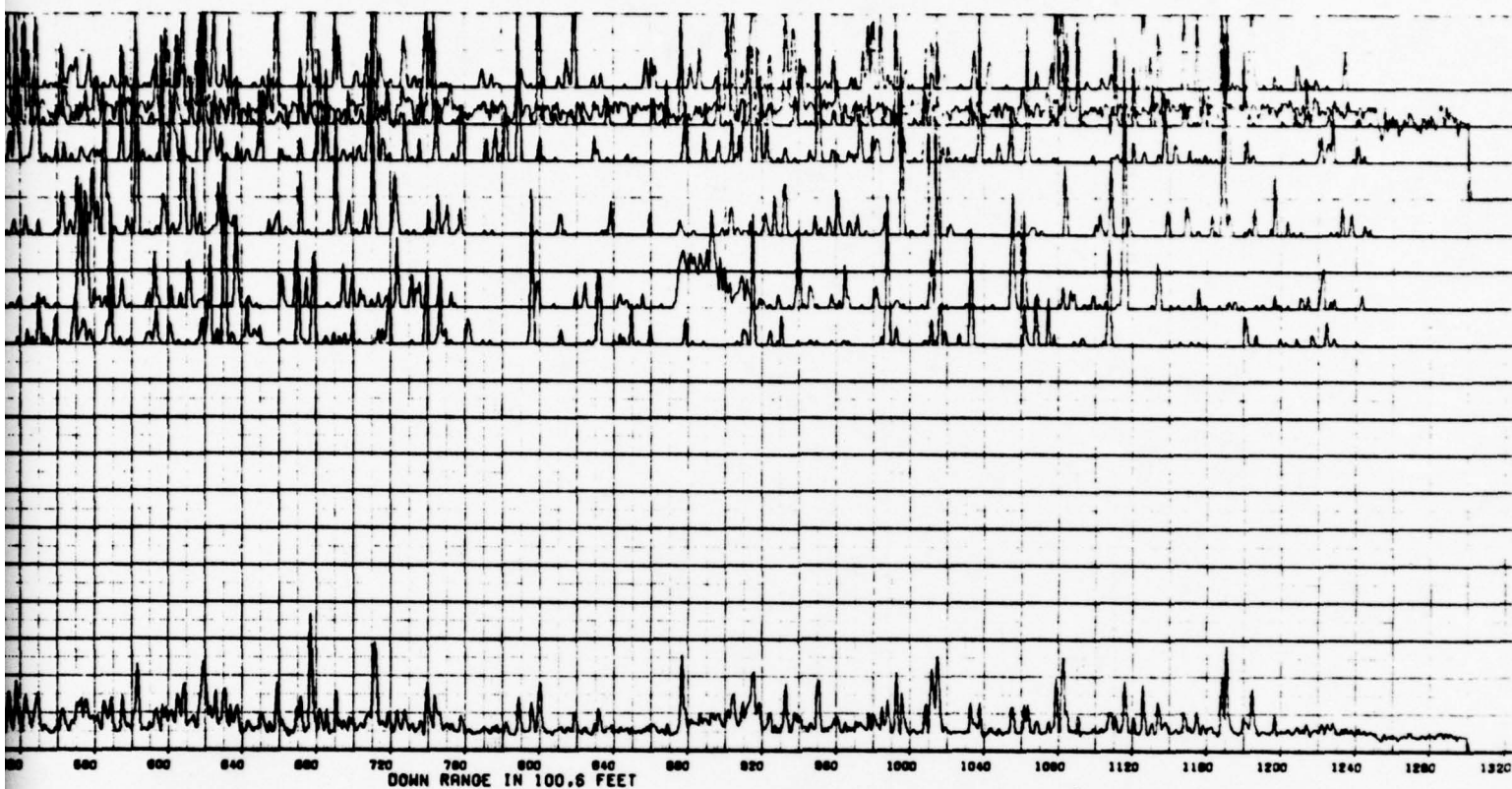
H-11/12

TAGSEA HIT MAP-0702-SS=5,ALT=1.1KFT DOWN WIND



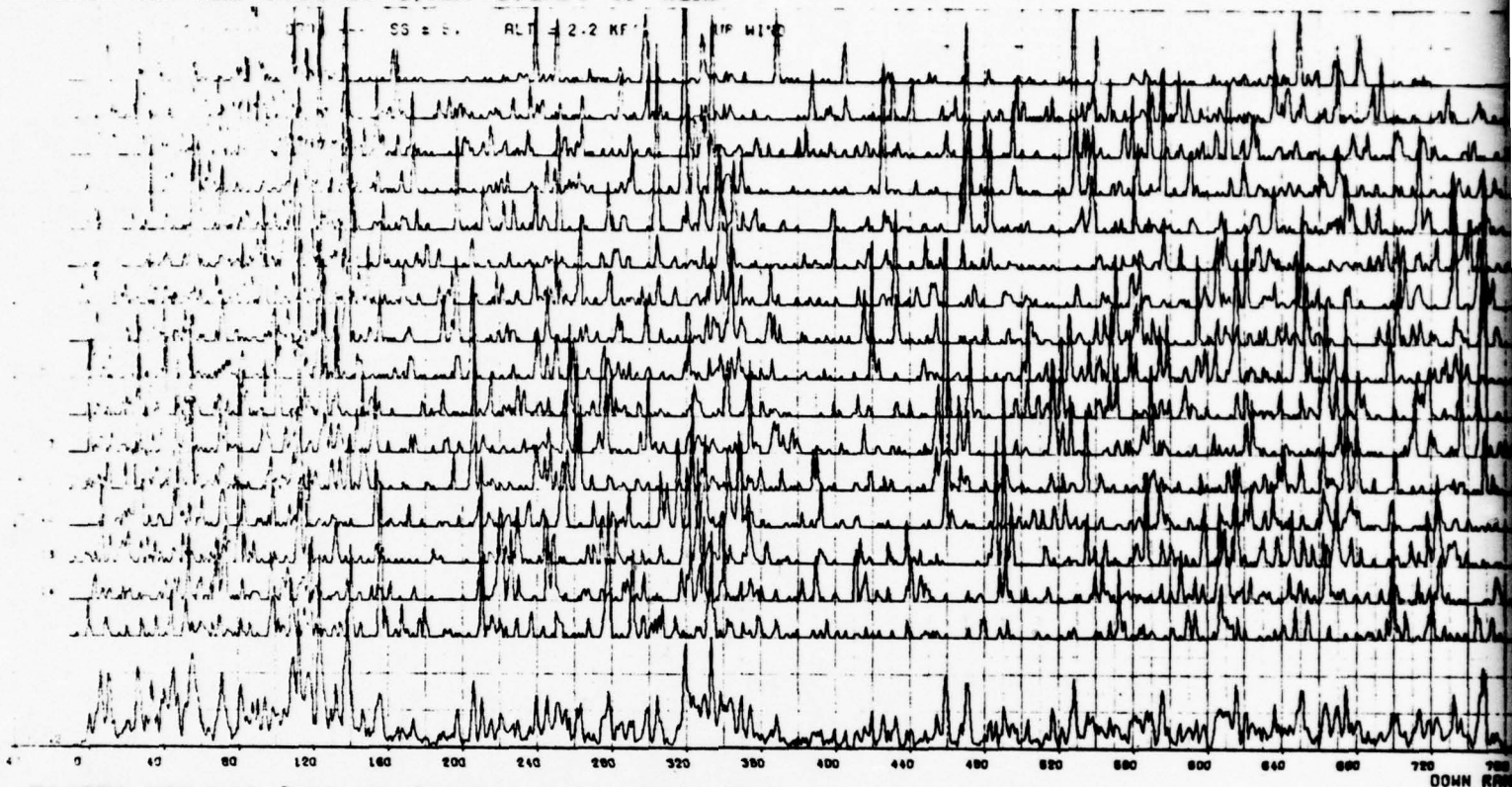
TAGSEA HIT MAP-0703-SS=5,ALT=1.1KFT CROSS WIND



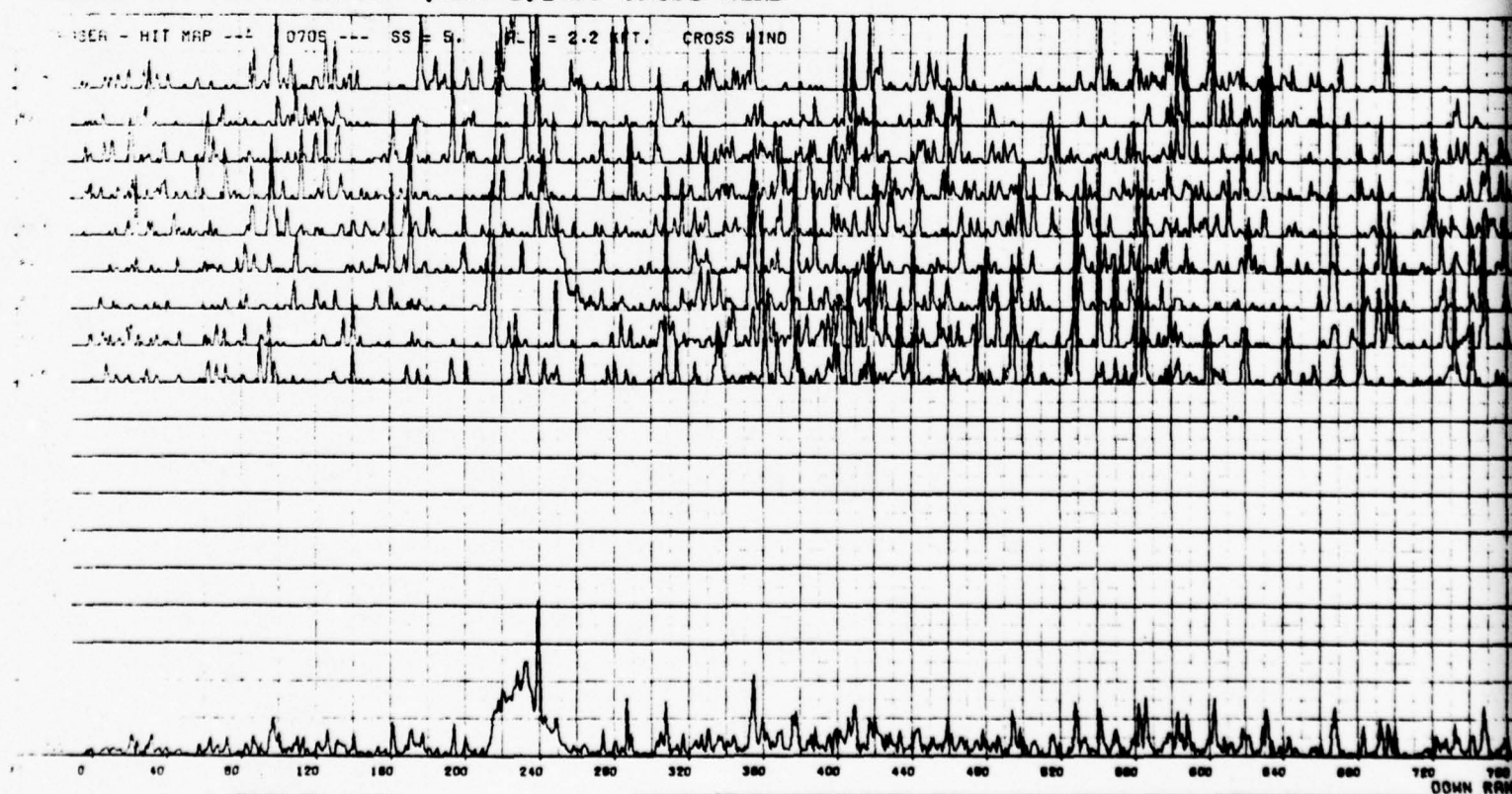


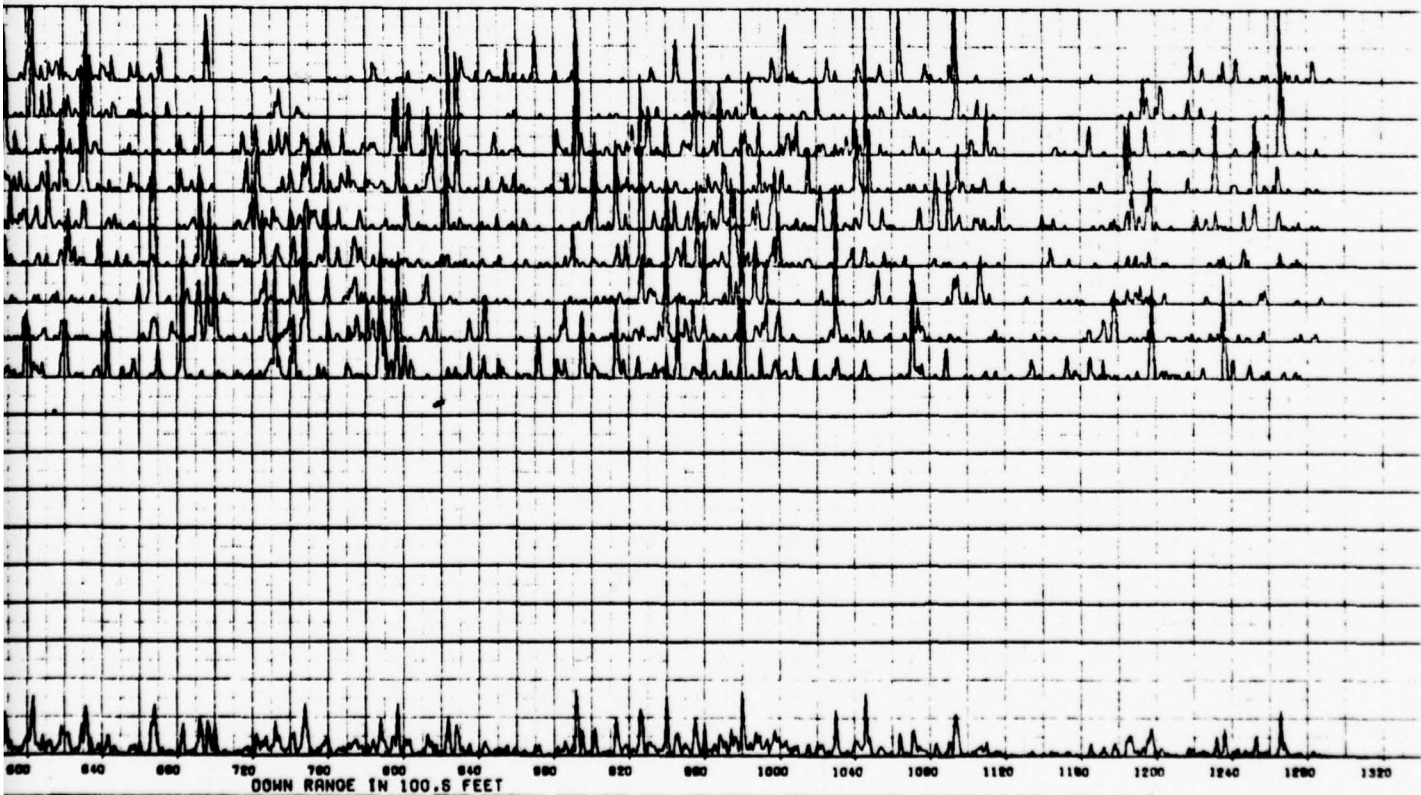
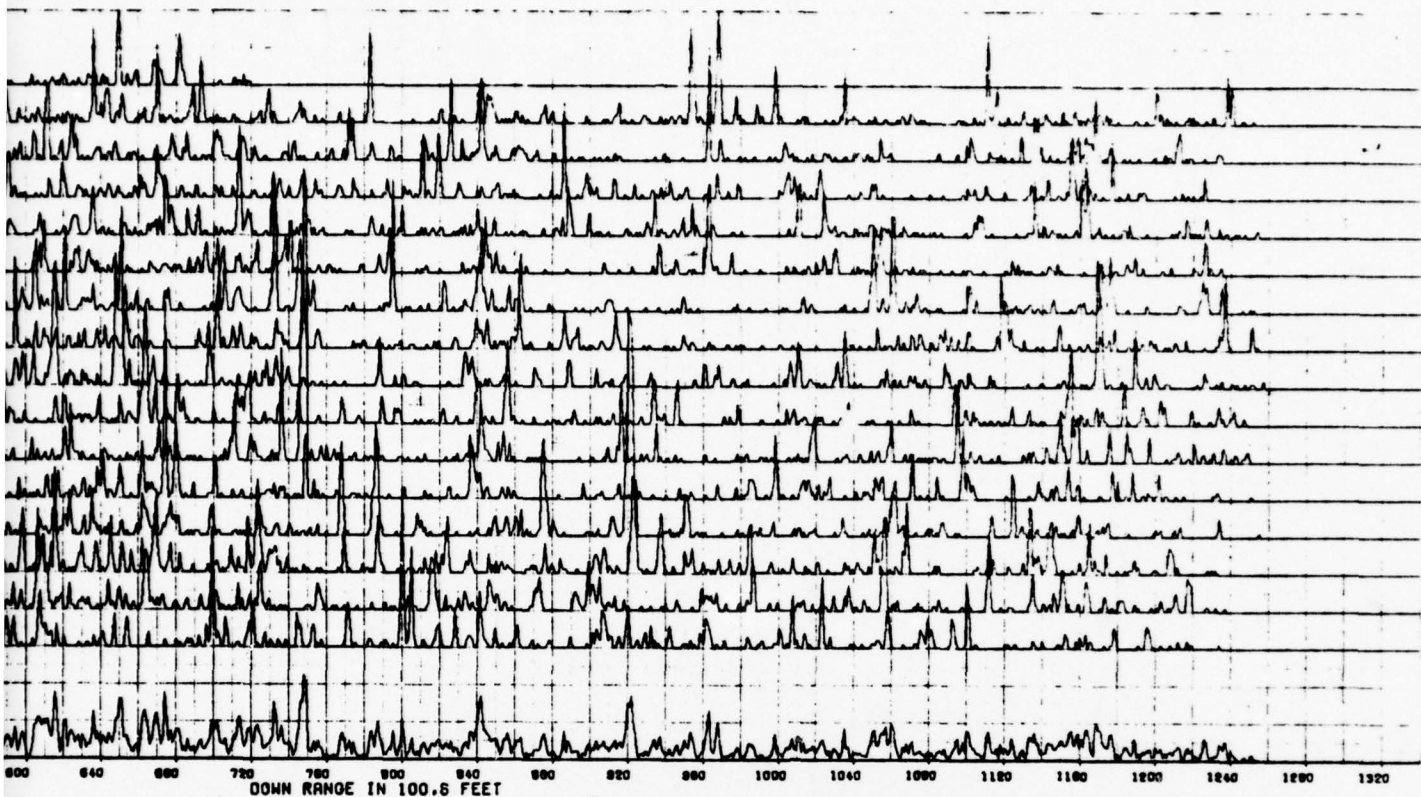
H-13/14

TAGSEA HIT MAP-0704-SS=5,ALT=2.2KFT UP WIND



TAGSEA HIT MAP-0706-SS=5,ALT=2.2KFT CROSS WIND

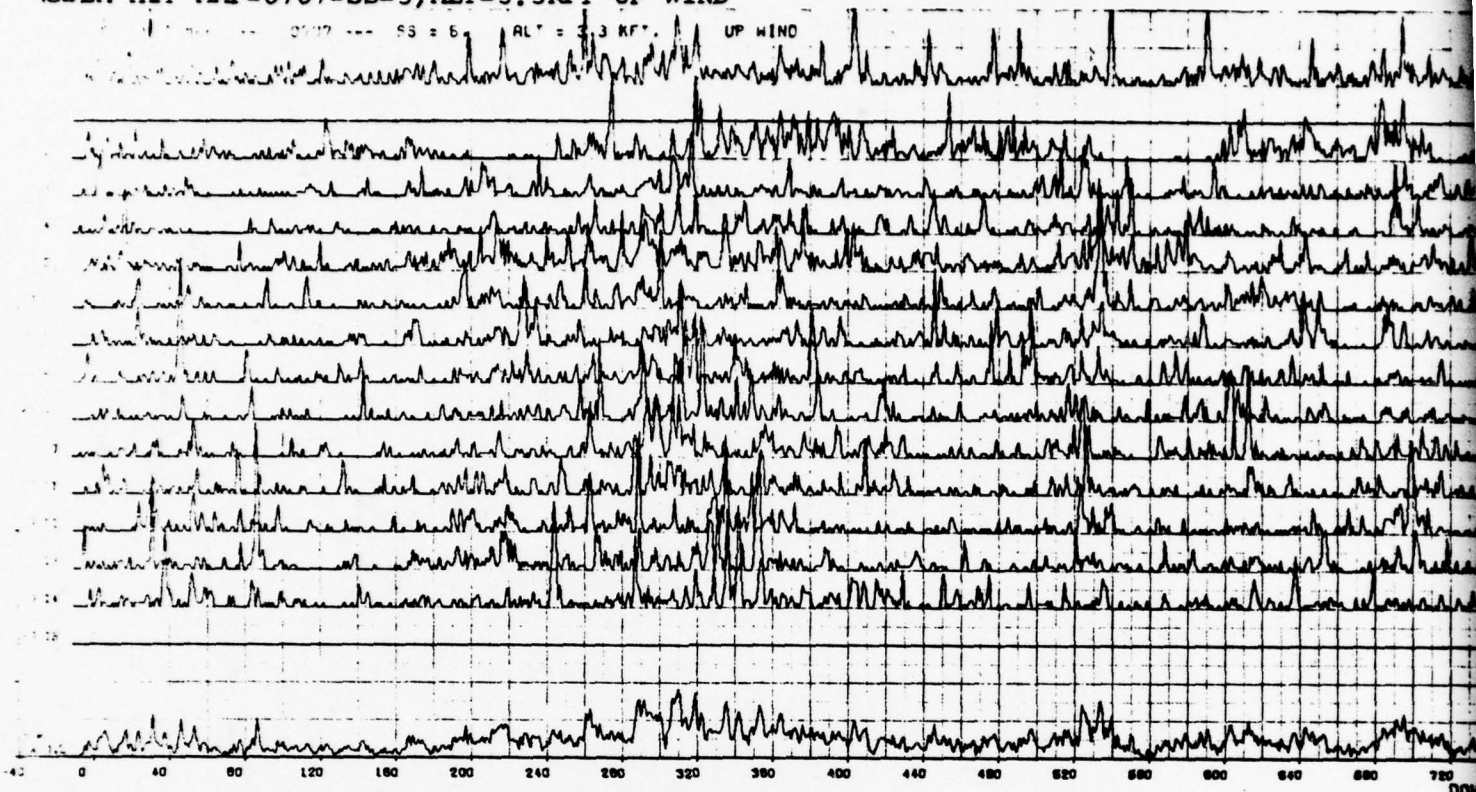




H-15/16

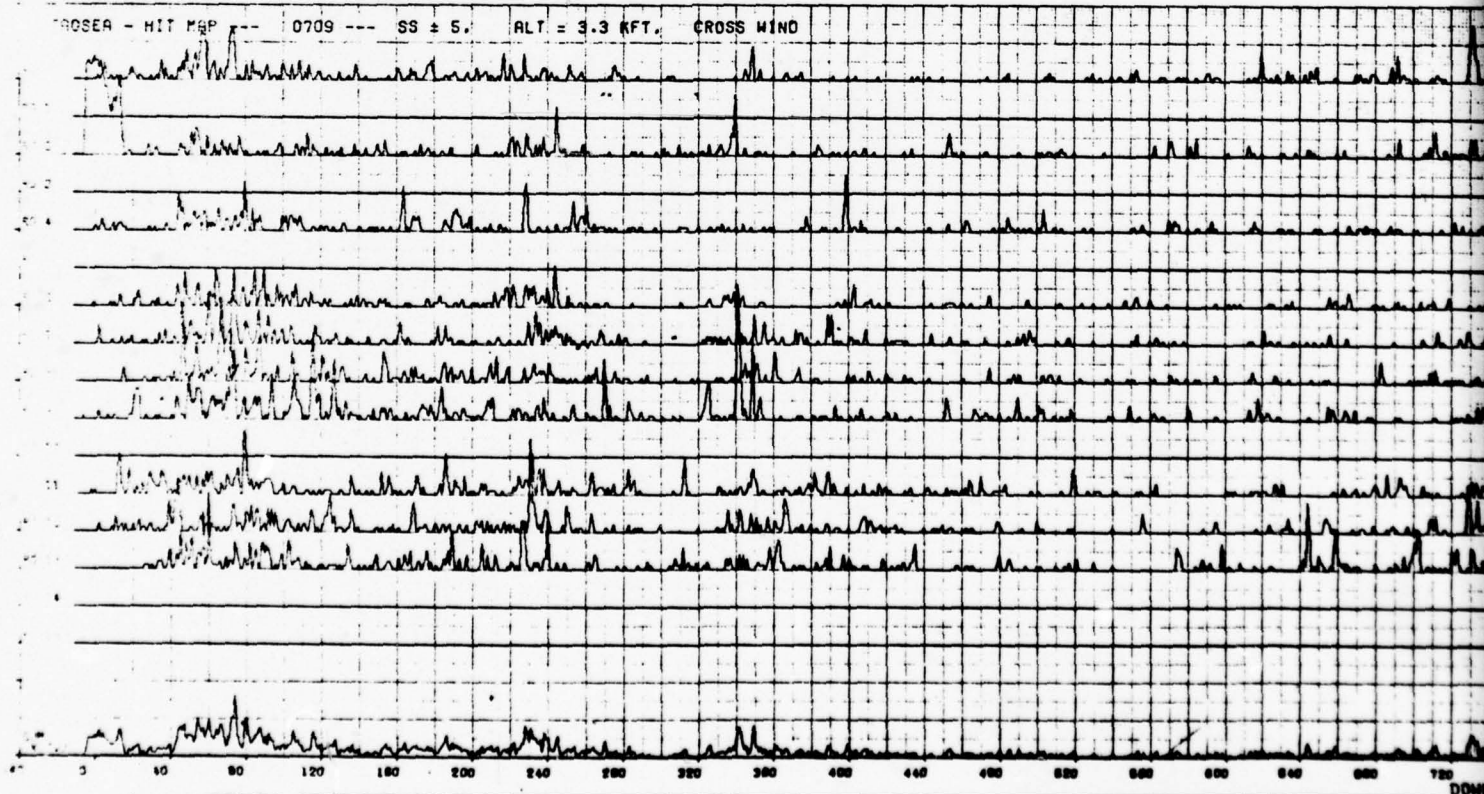
TAGSEA HIT MAP-0707-SS=5,ALT=3.3KFT UP WIND

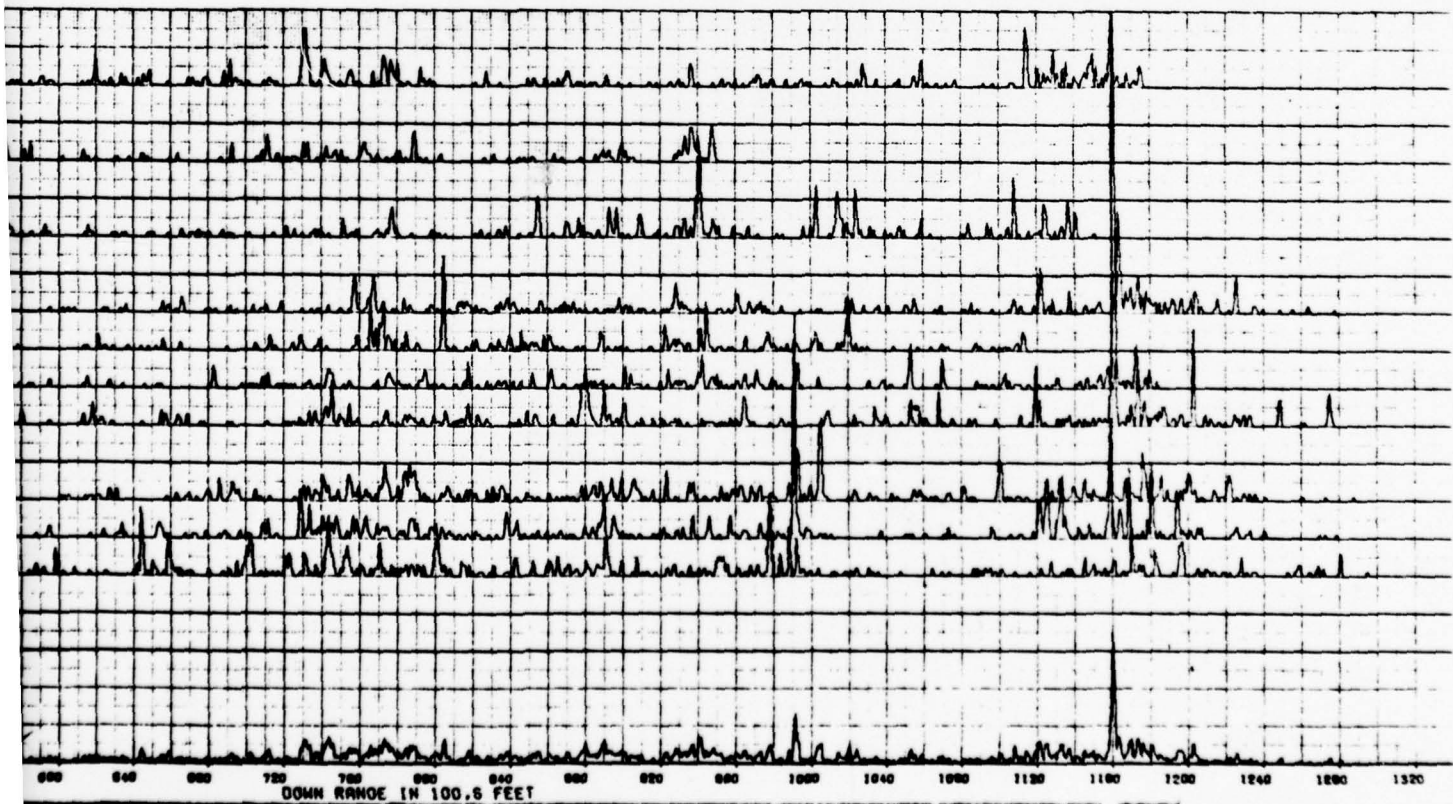
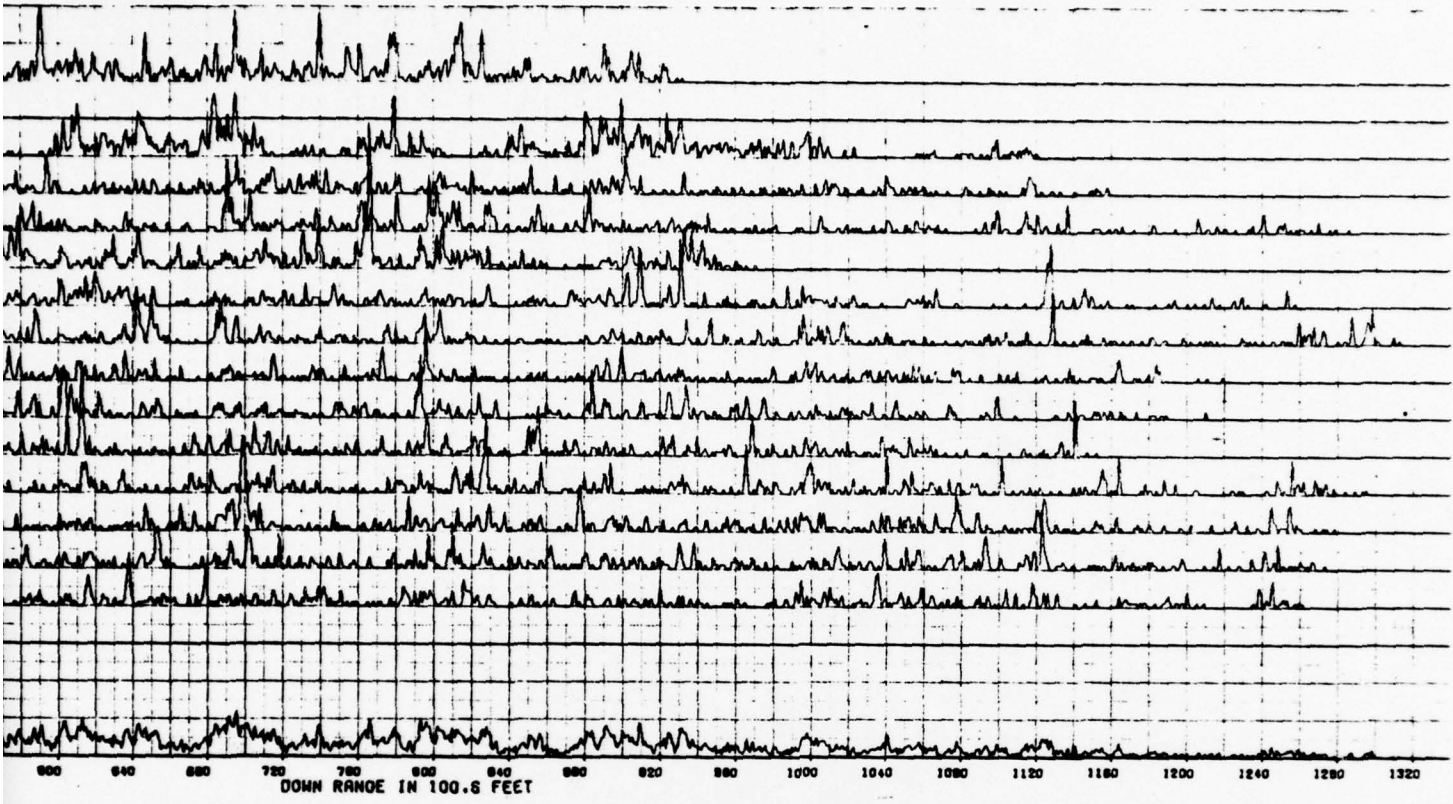
TAGSEA - HIT MAP --- 0707 --- SS = 5, ALT = 3.3 KFT, UP WIND



TAGSEA HIT MAP-0709-SS=5,ALT=3.3KFT CROSS WIND

TAGSEA - HIT MAP --- 0709 --- SS = 5, ALT = 3.3 KFT, CROSS WIND

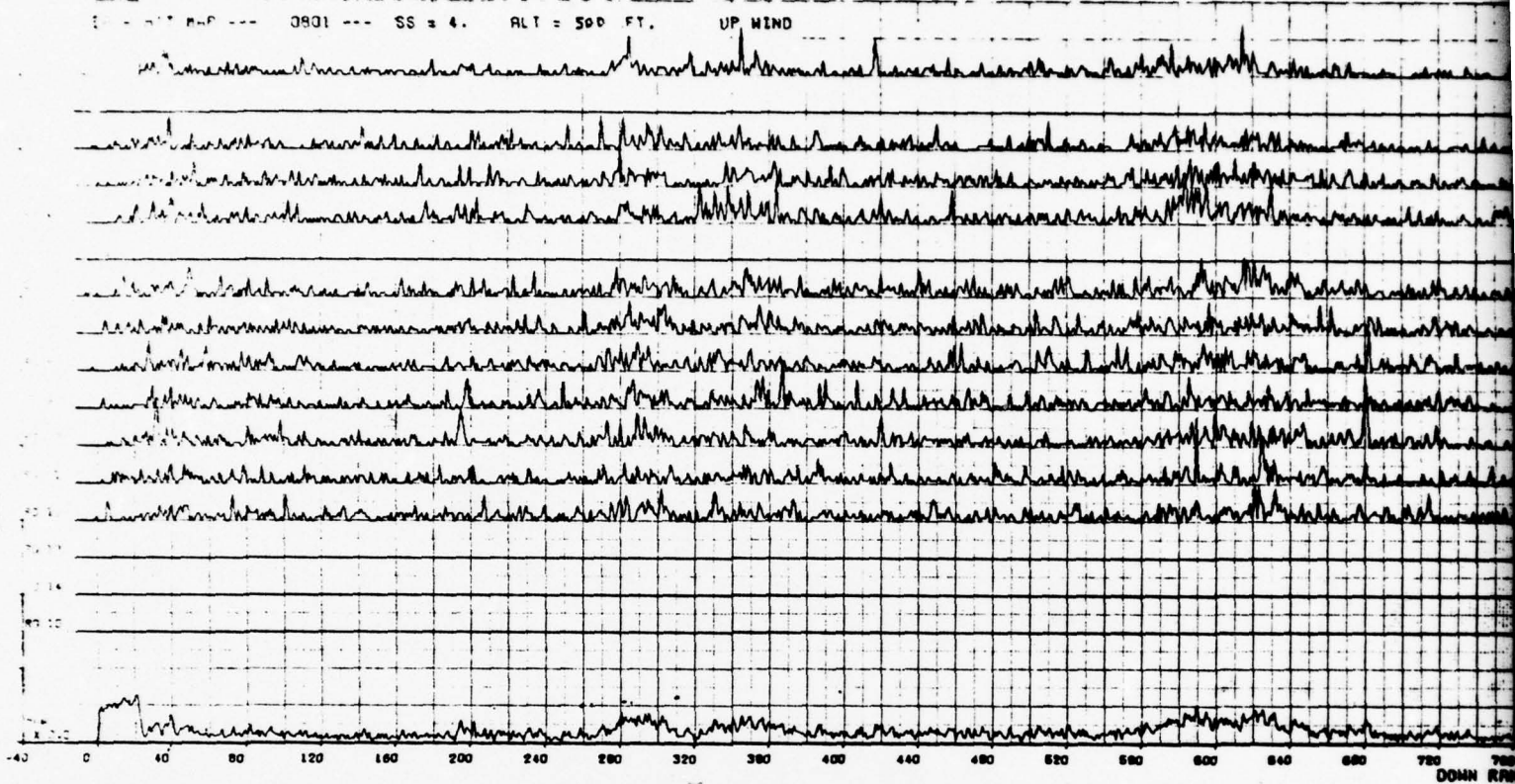




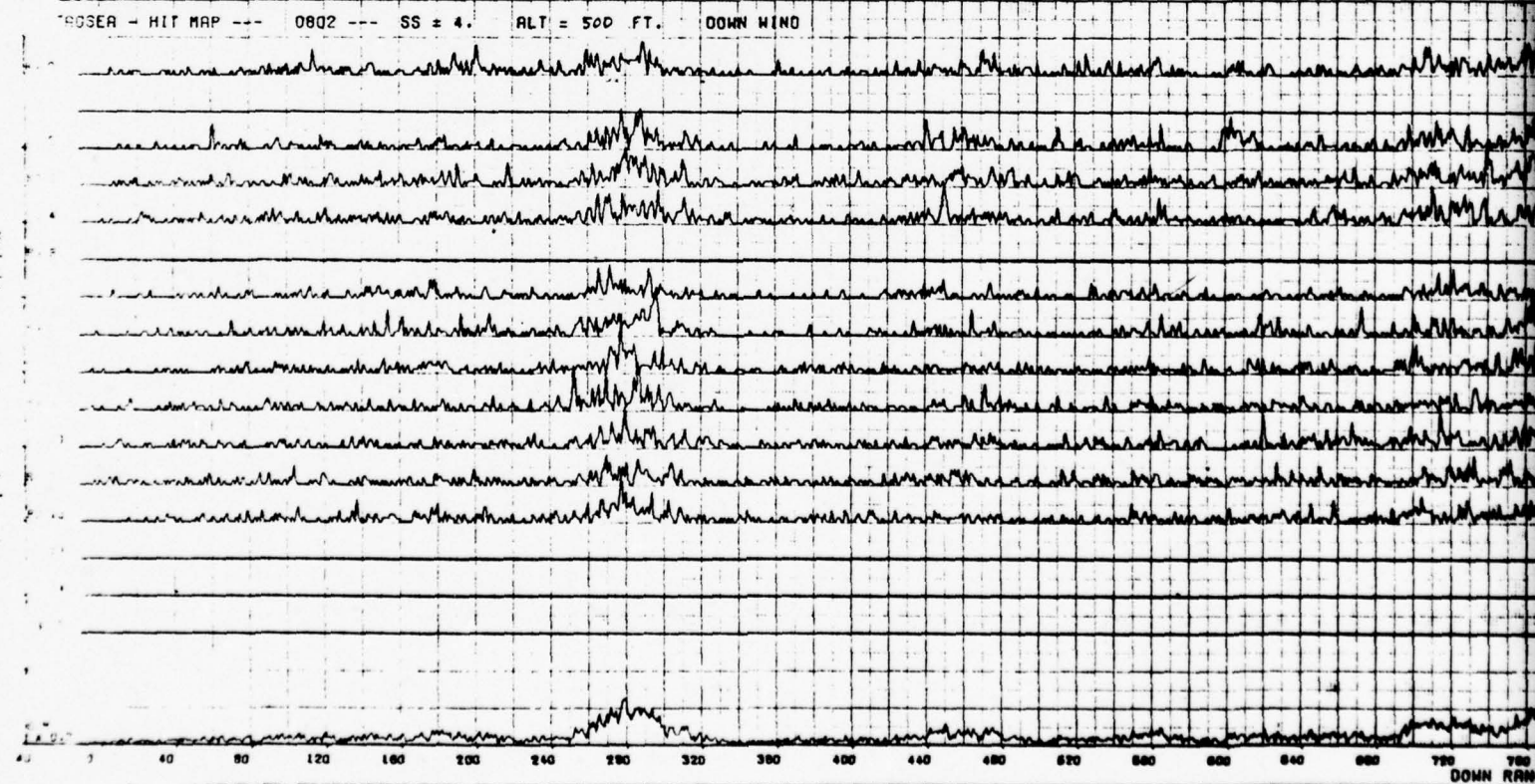
H-17/18

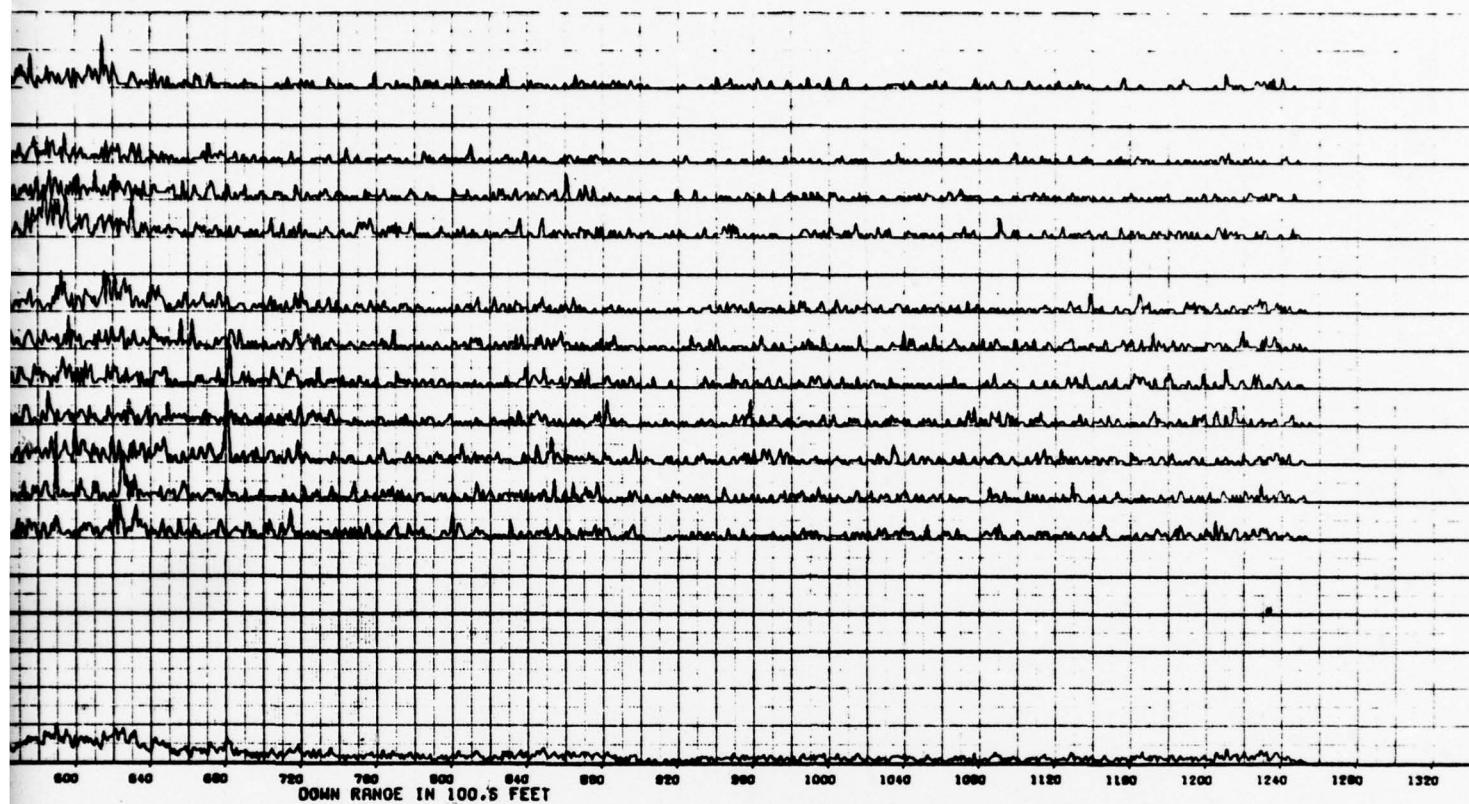
2

TAGSEA HIT MAP-0801-SS=4, ALT=500 FT UP WIND



TAGSEA HIT MAP-0802-SS=4, ALT=500 FT DOWN WIND



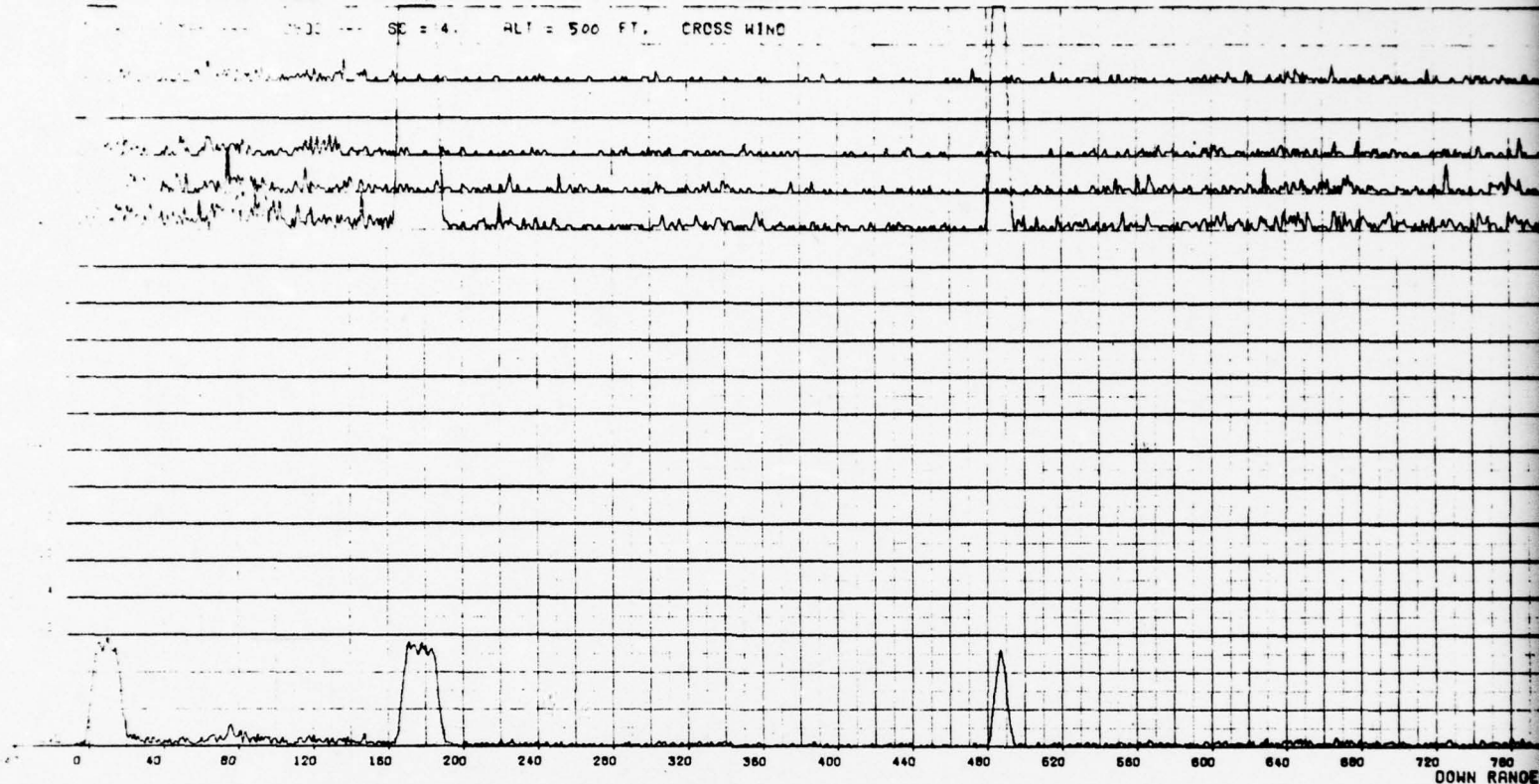


H-19/20

2

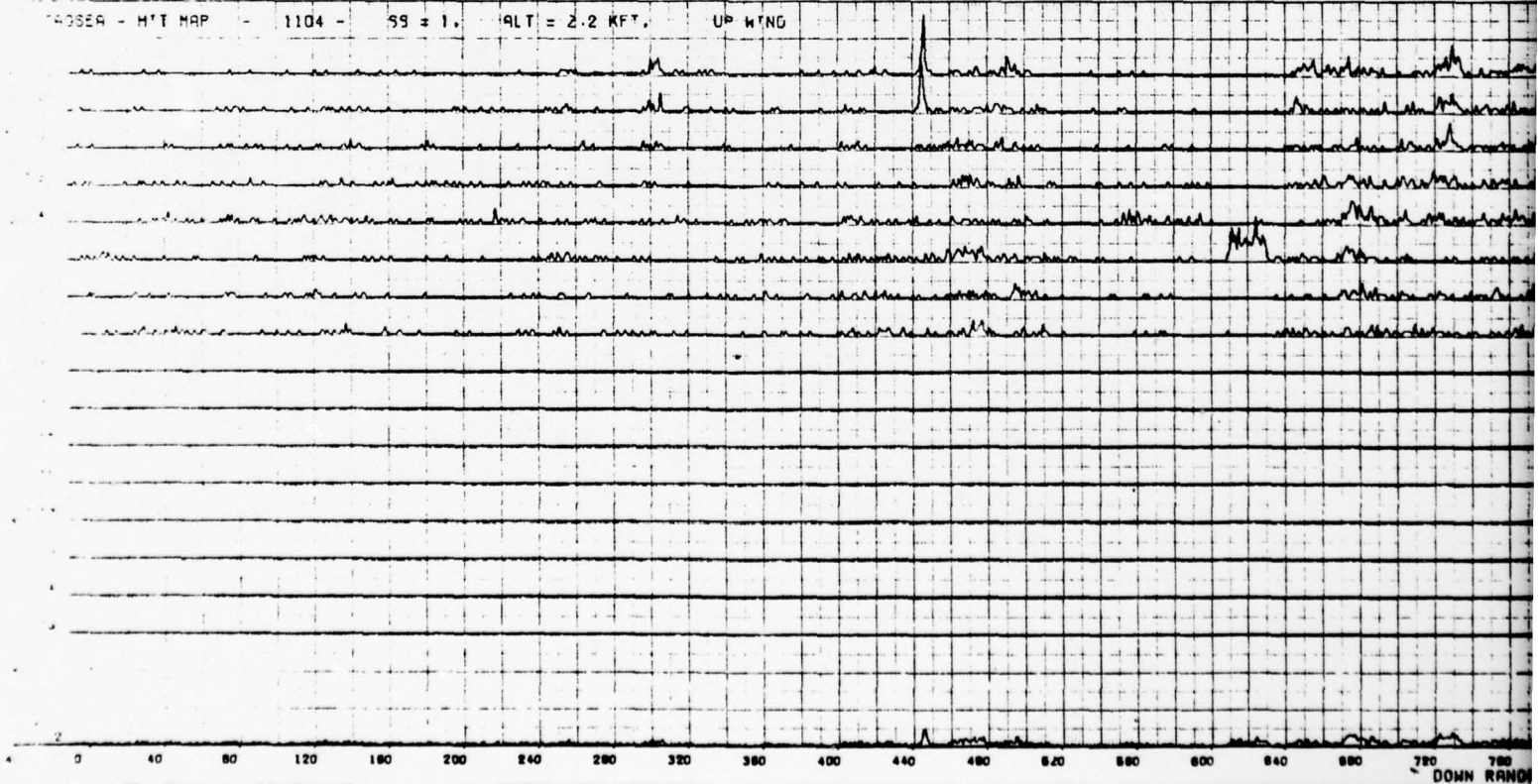
TAGSEA HIT MAP-0803-SS=4, ALT=500 FT CROSS WIND

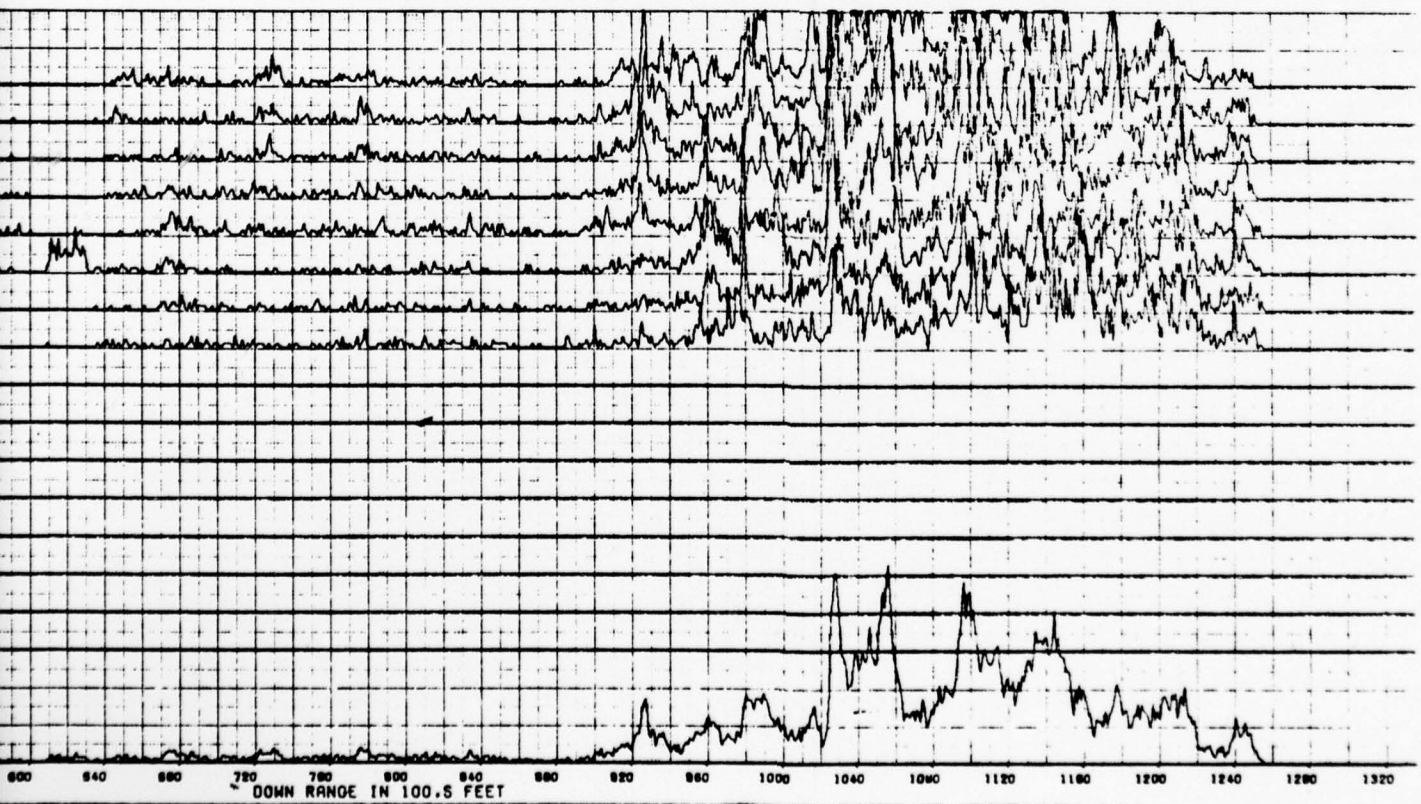
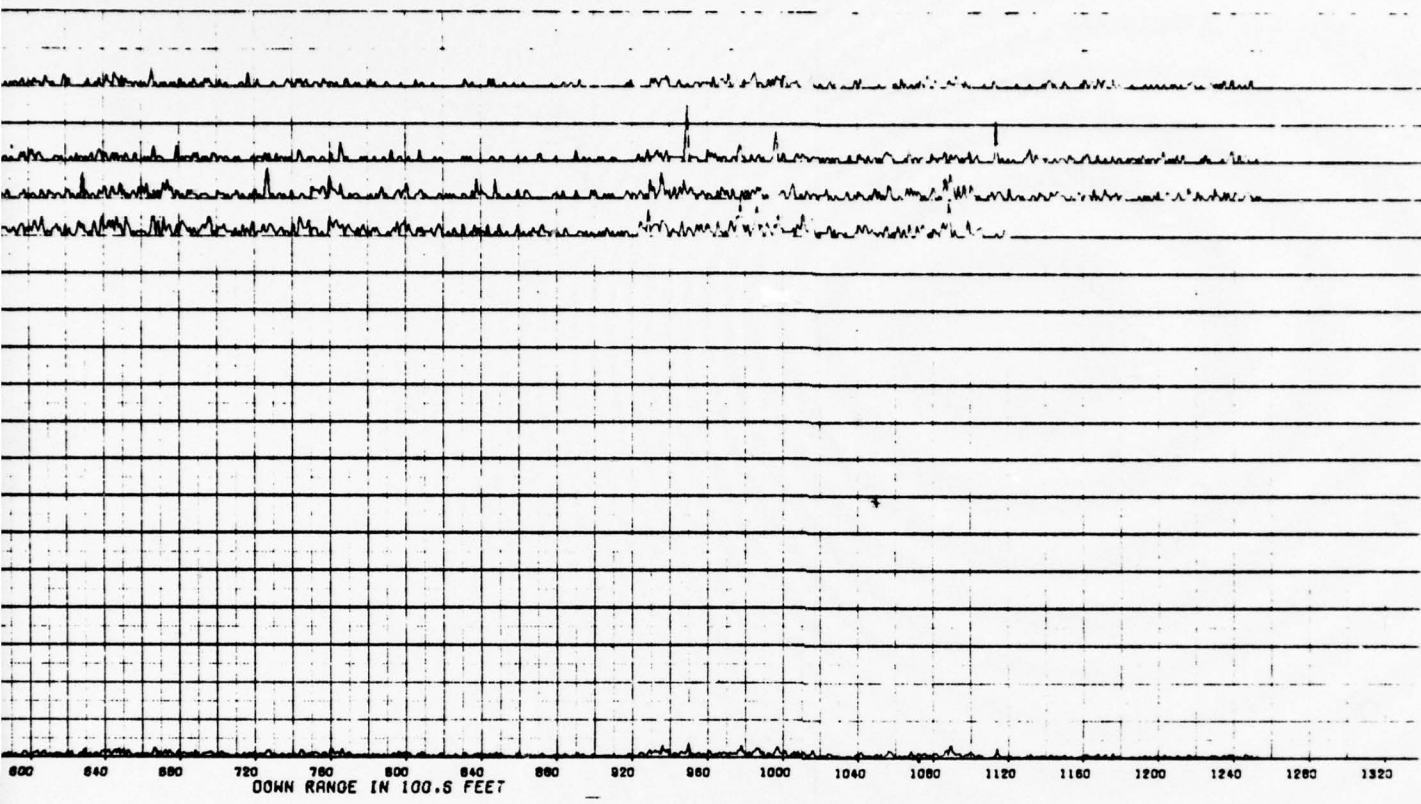
SC = 4. ALT = 500 FT. CROSS WIND



TAGSEA HIT MAP-1104-SS=1, ALT=2.2KFT UP WIND

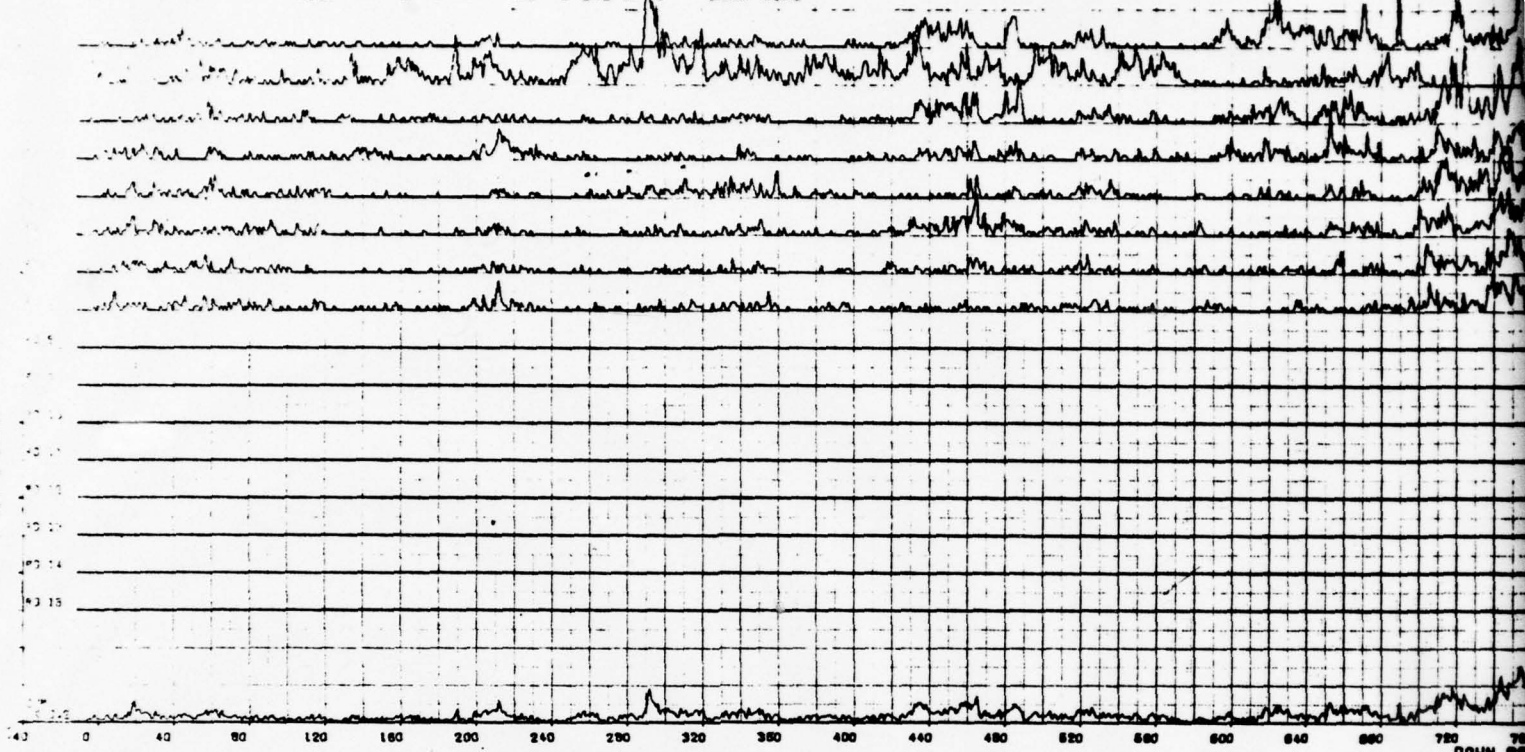
TAGSEA - HIT MAP - 1104 - SS = 1. ALT = 2.2 KFT. UP WIND





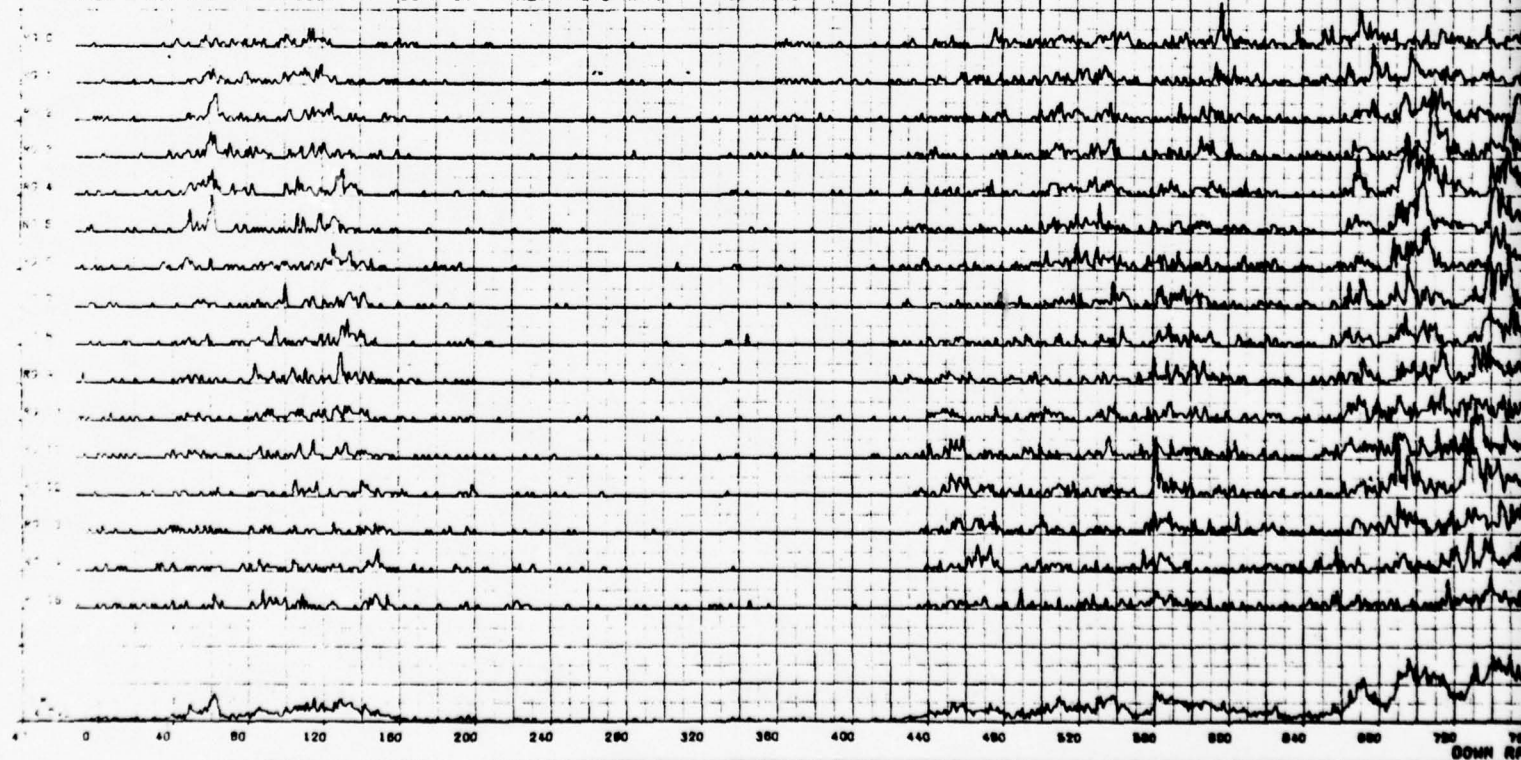
TAGSEA HIT MAP-1105-SS=1,SLT=2.2KFT DOWN WIND

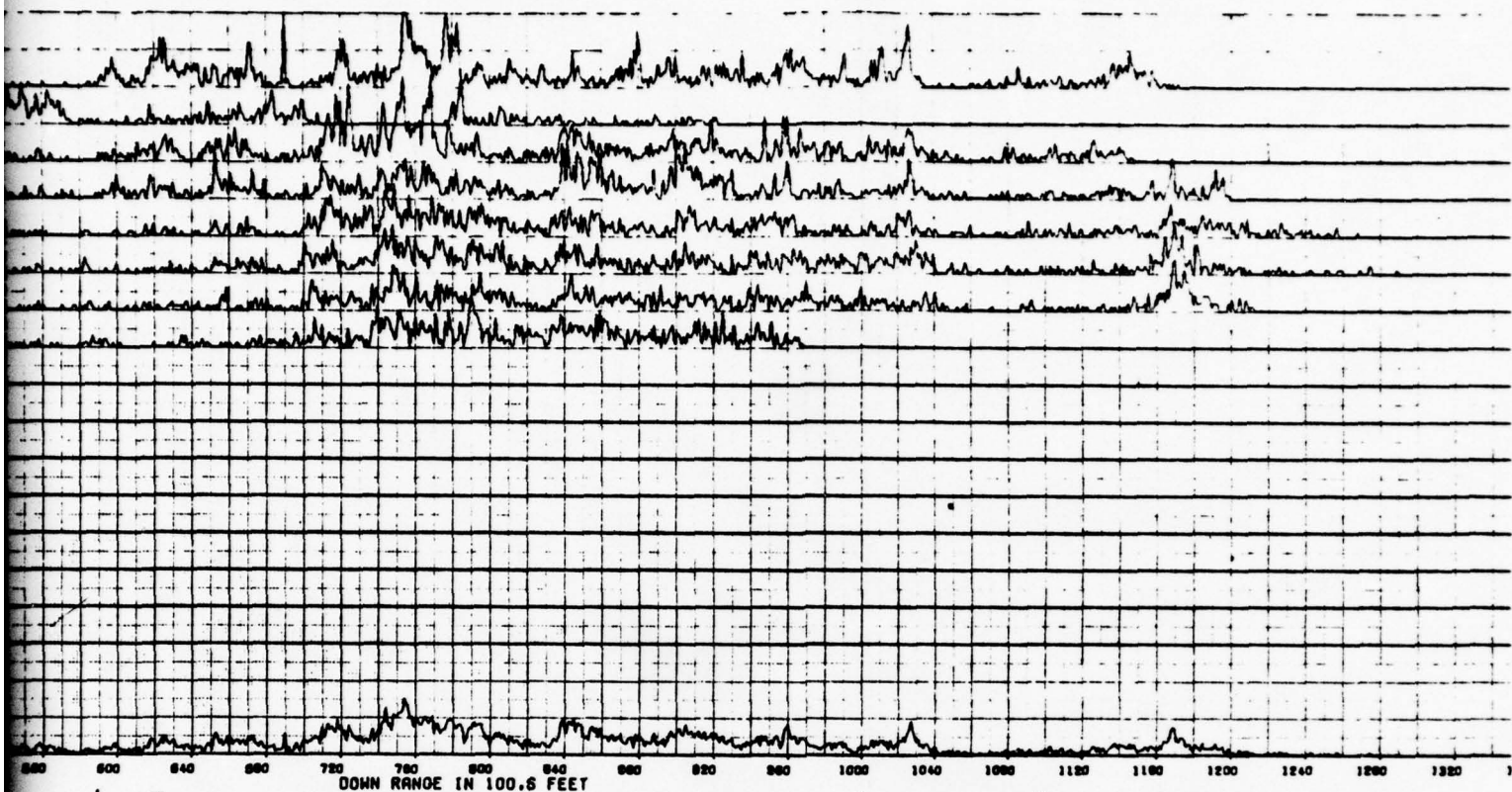
1105 SS = 1 ALT = 2.2 KFT DOWN WIND



TAGSEA HIT MAP-1107-SS=1,ALT=3.3KFT UP WIND

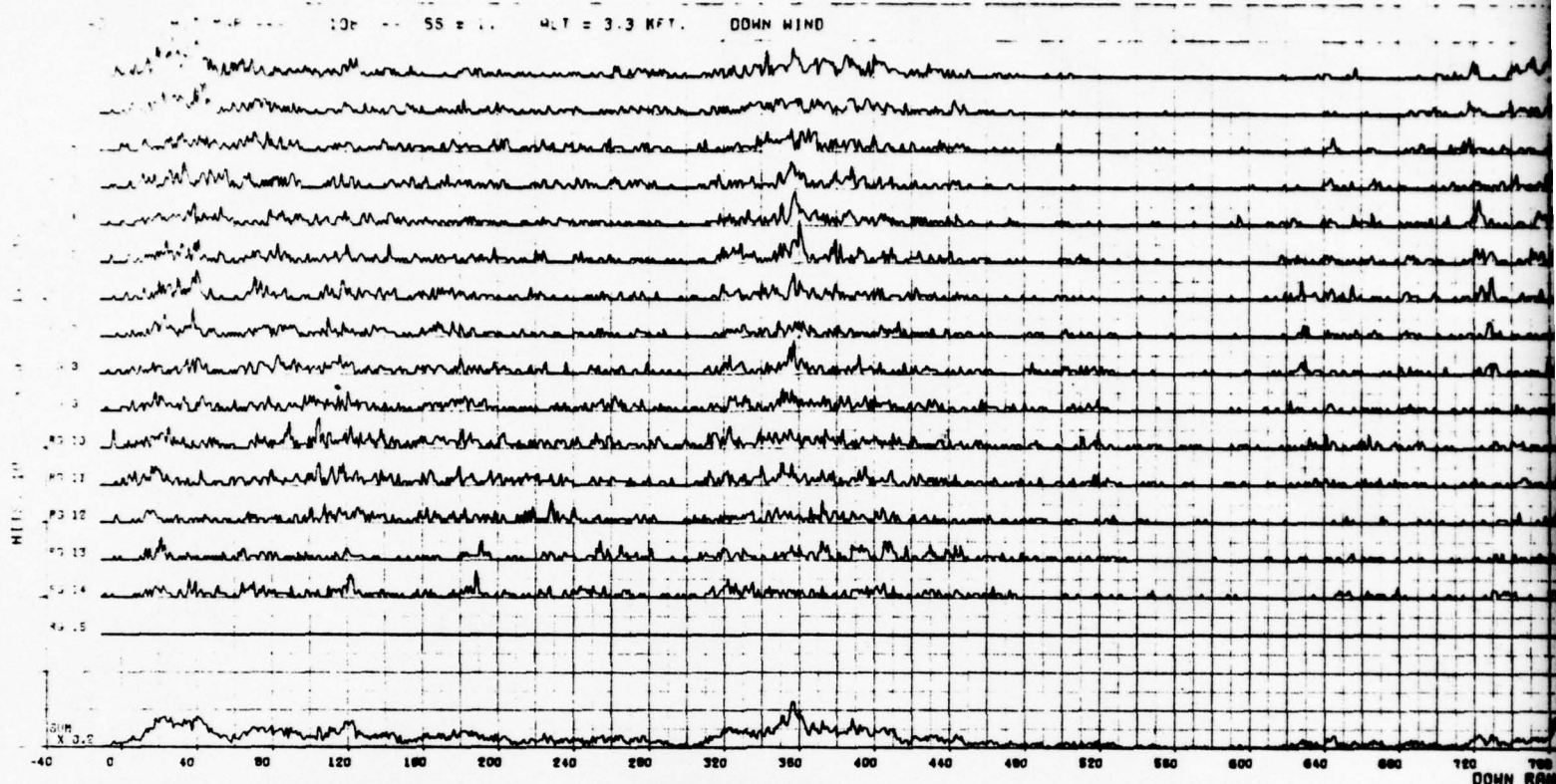
1107 SS = 1 ALT = 3.3 KFT UP WIND





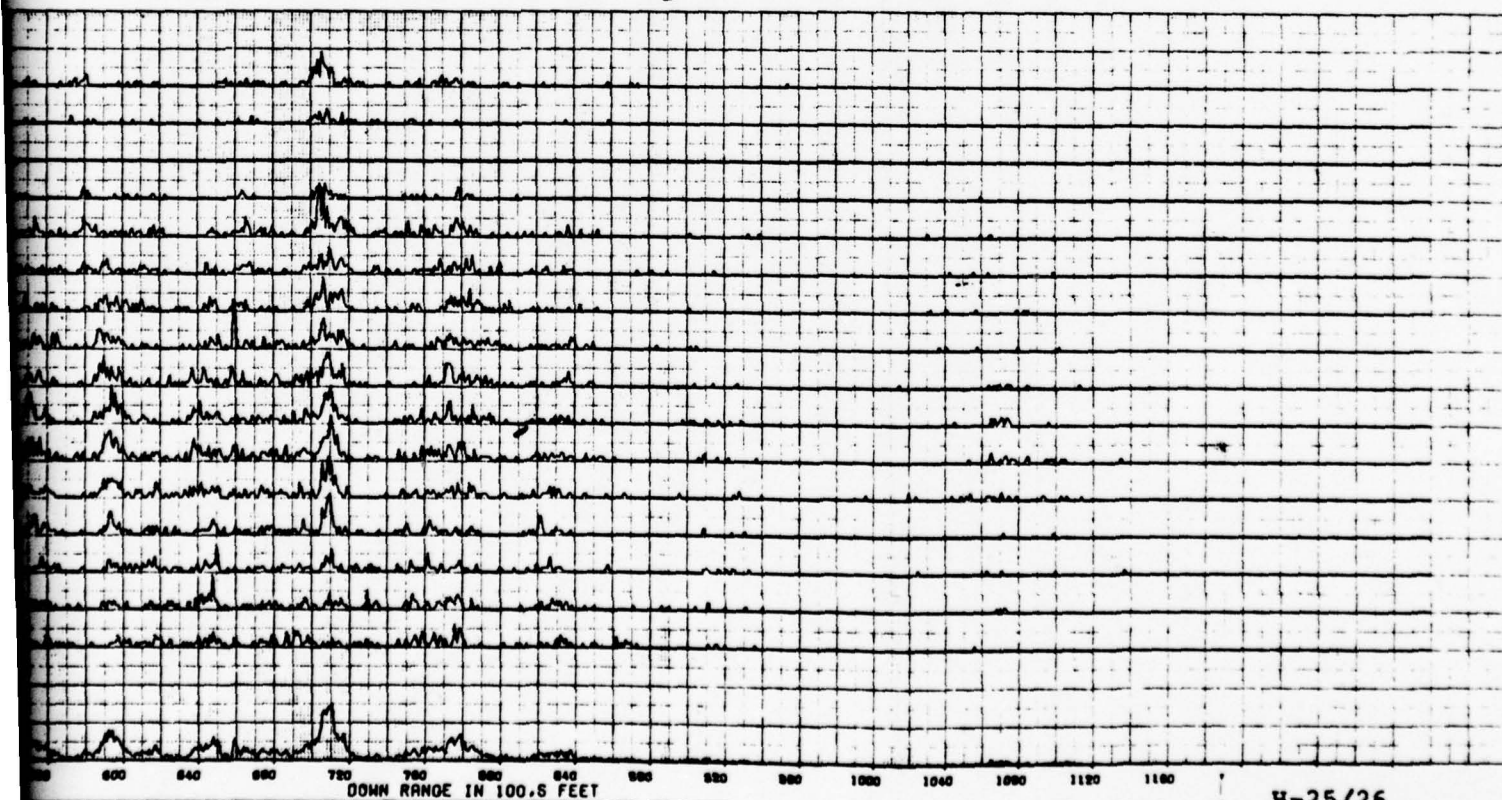
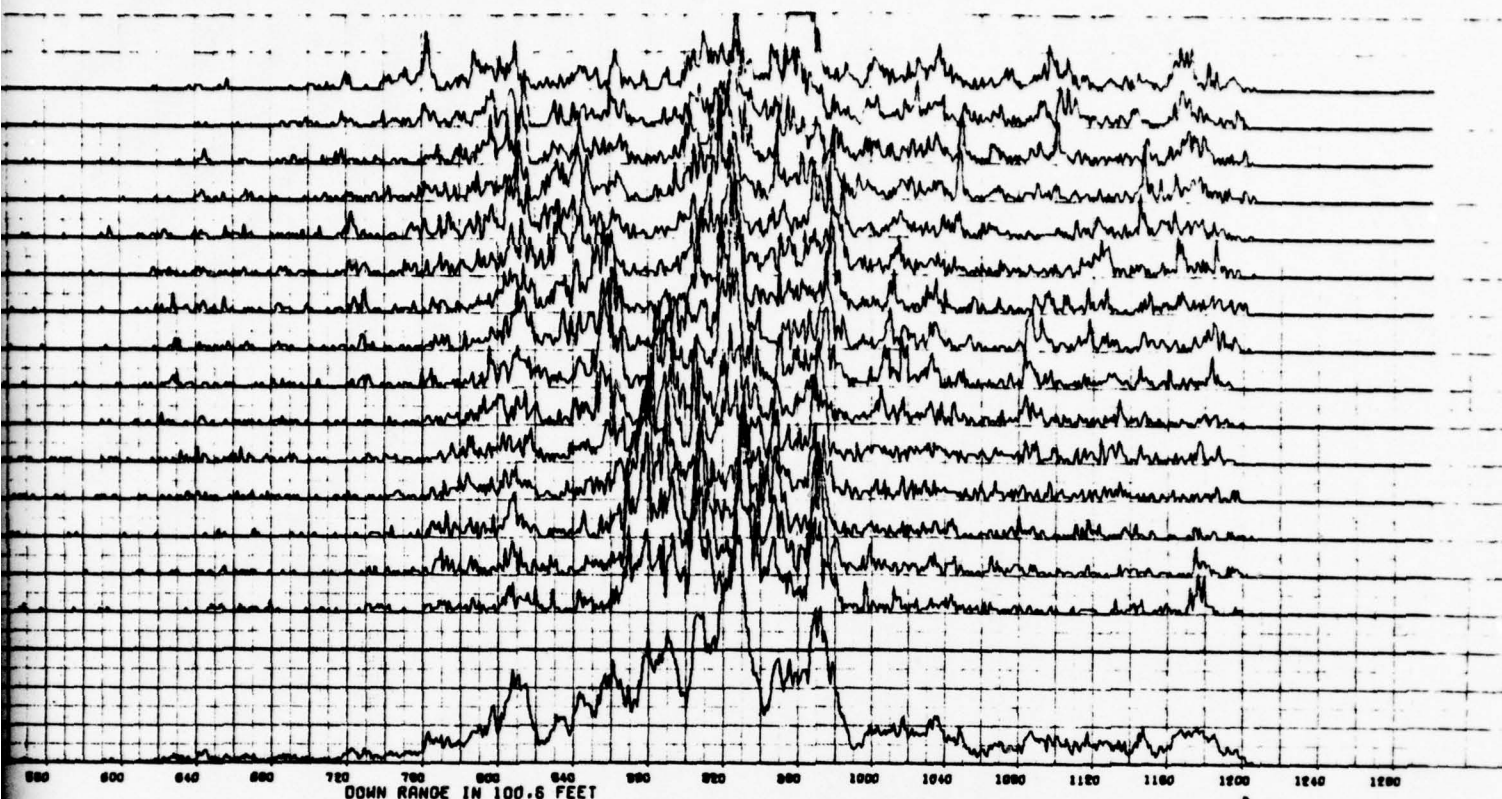
H-23/24

TAGSEA HIT MAP-1108-SS=1,ALT=3.3KFT DOWN WIND



TAGSEA HIT MAP-1109-SS=1,ALT=3.3KFT CROSS WIND

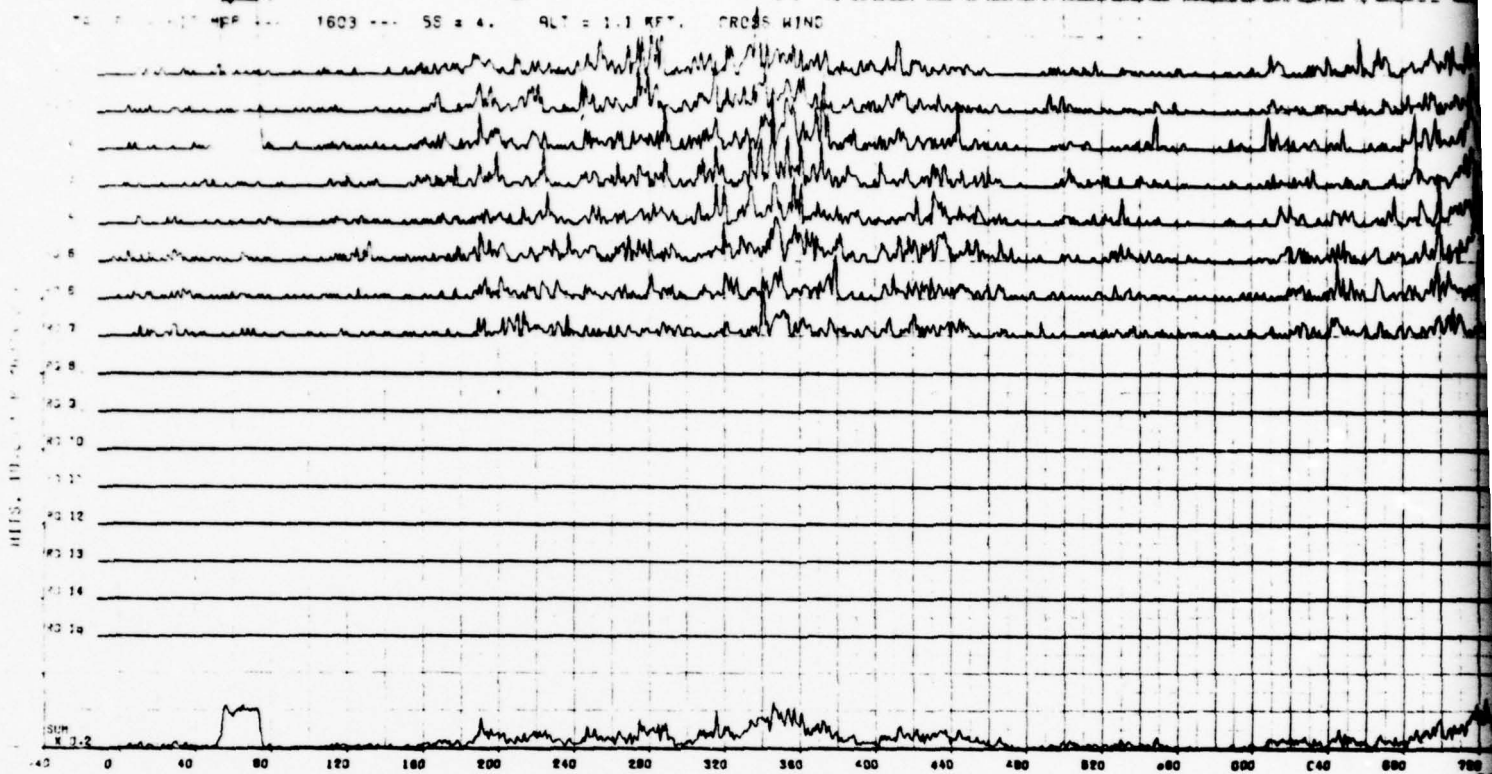




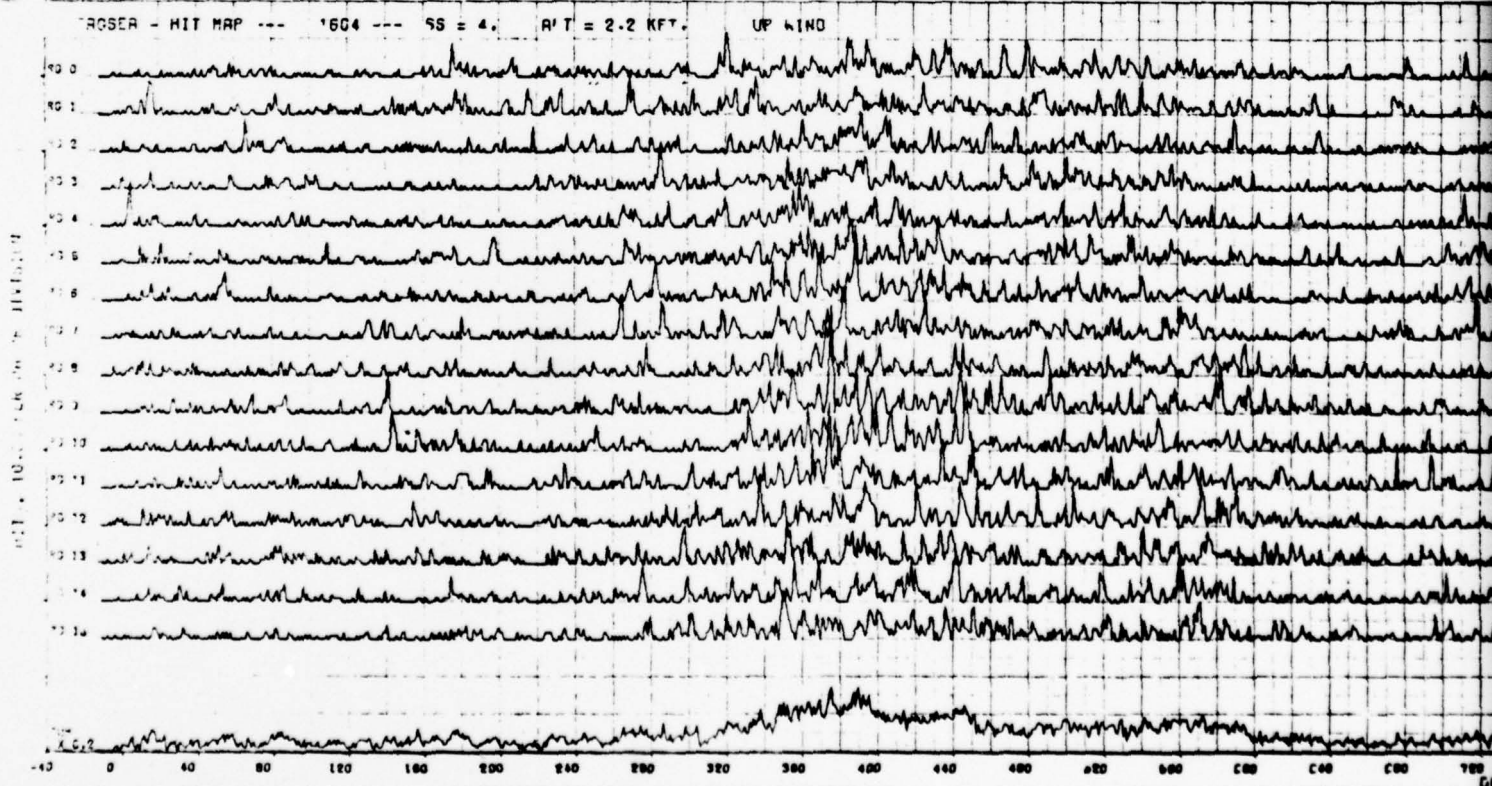
H-25/26

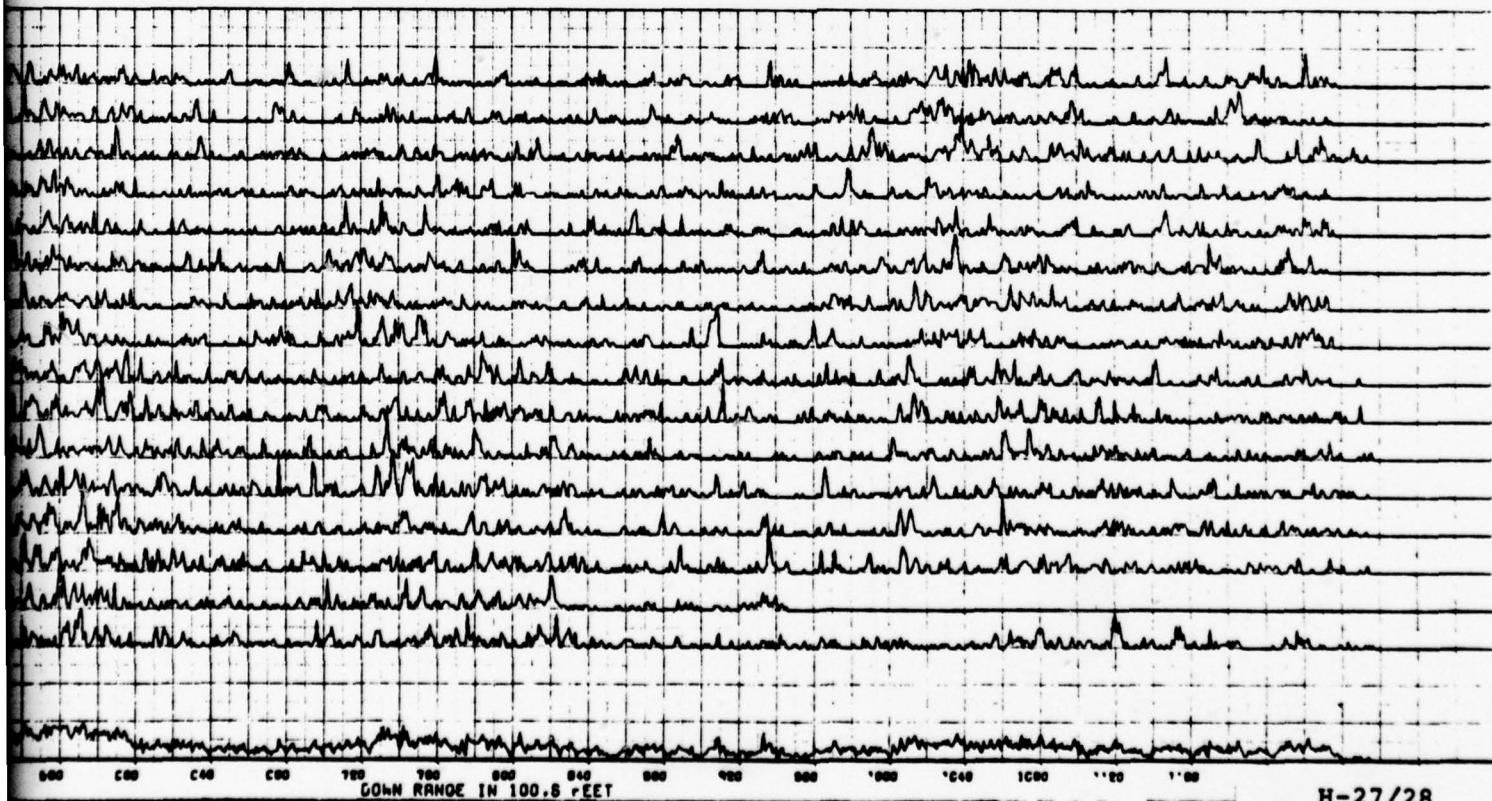
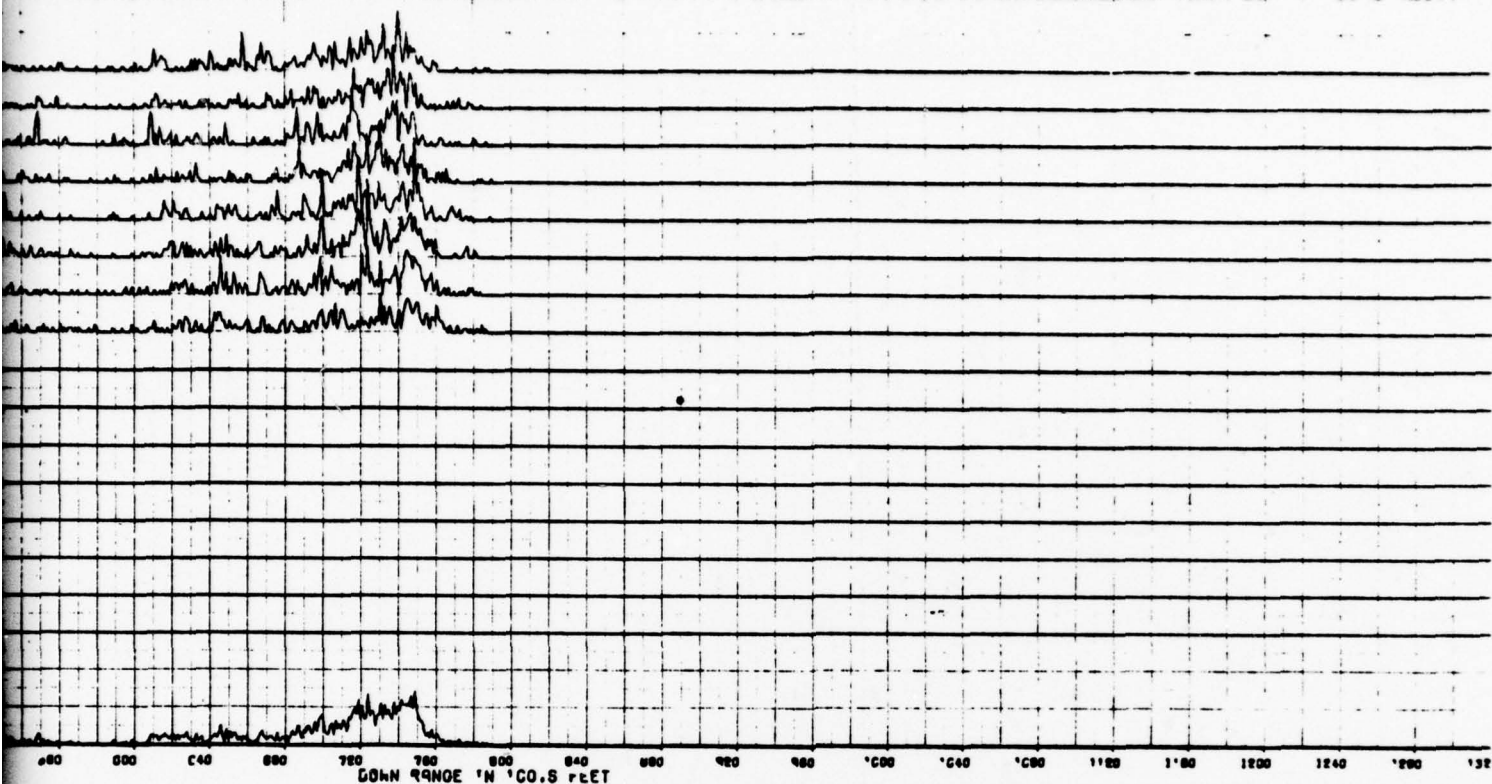
2

TAGSEA HIT MAP-1603-SS=4,ALT=1.1KFT CROSS WIND



TAGSEA HIT MAP-1604-SS=4,ALT=2.2KFT UP WIND

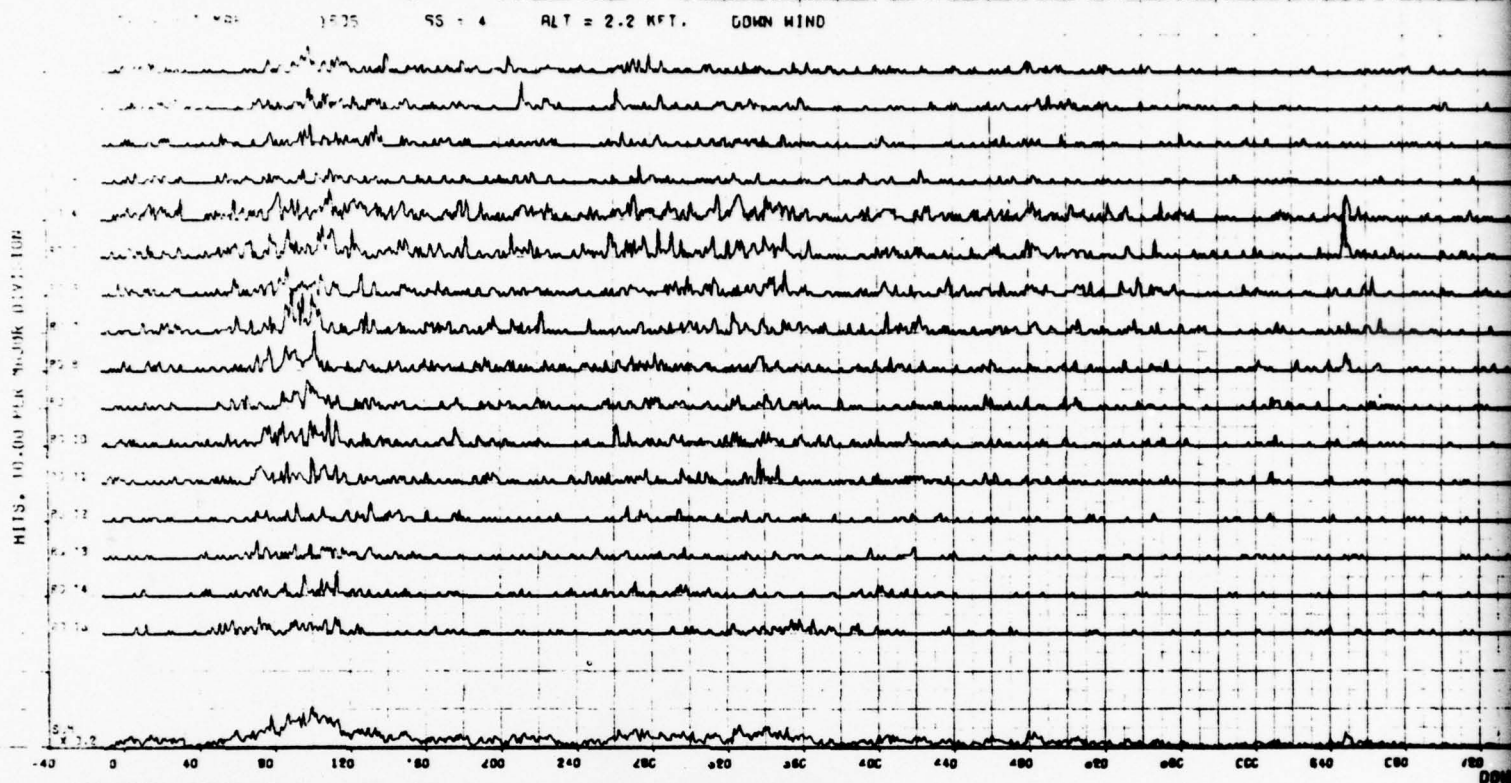




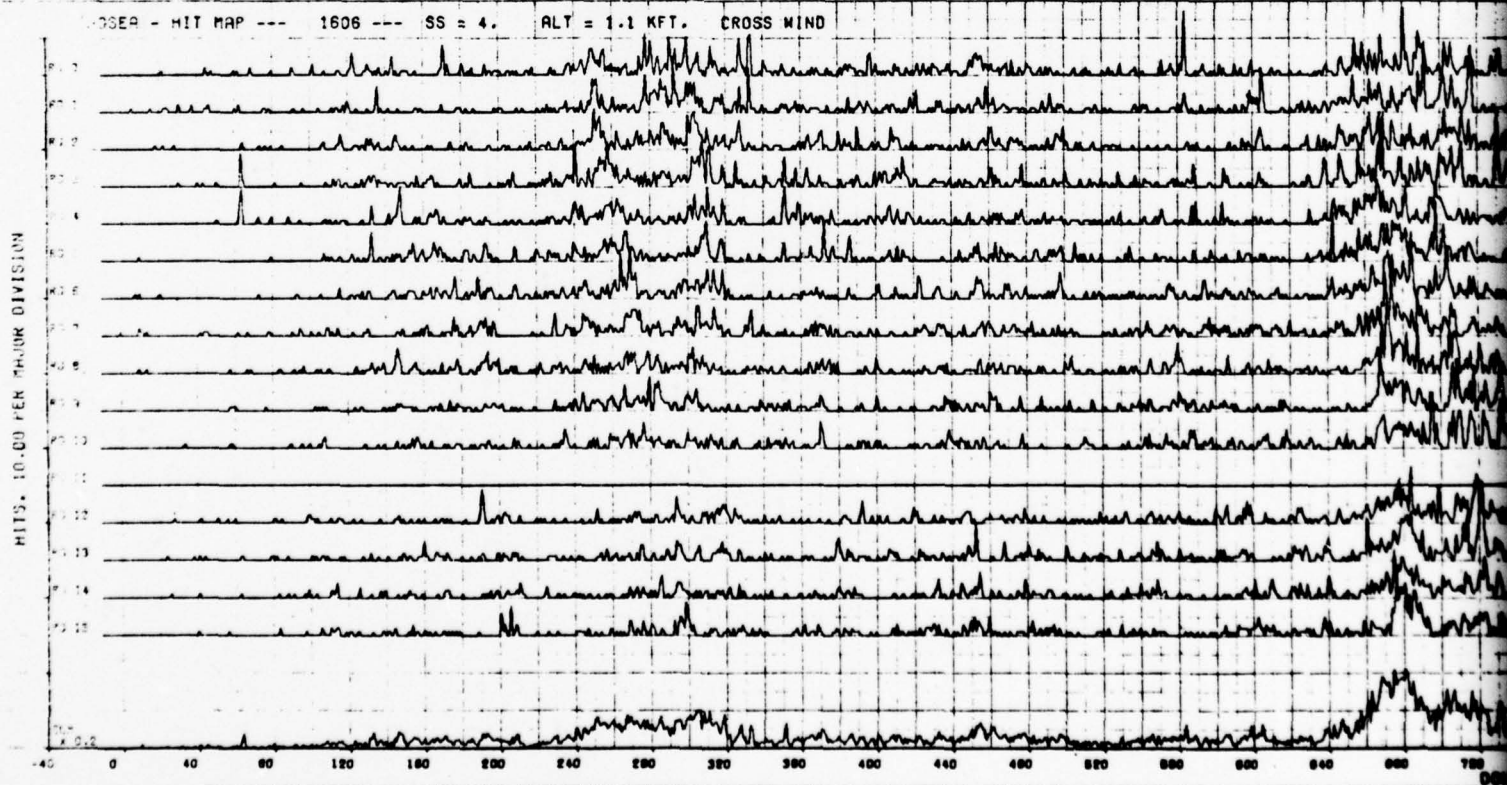
H-27/28

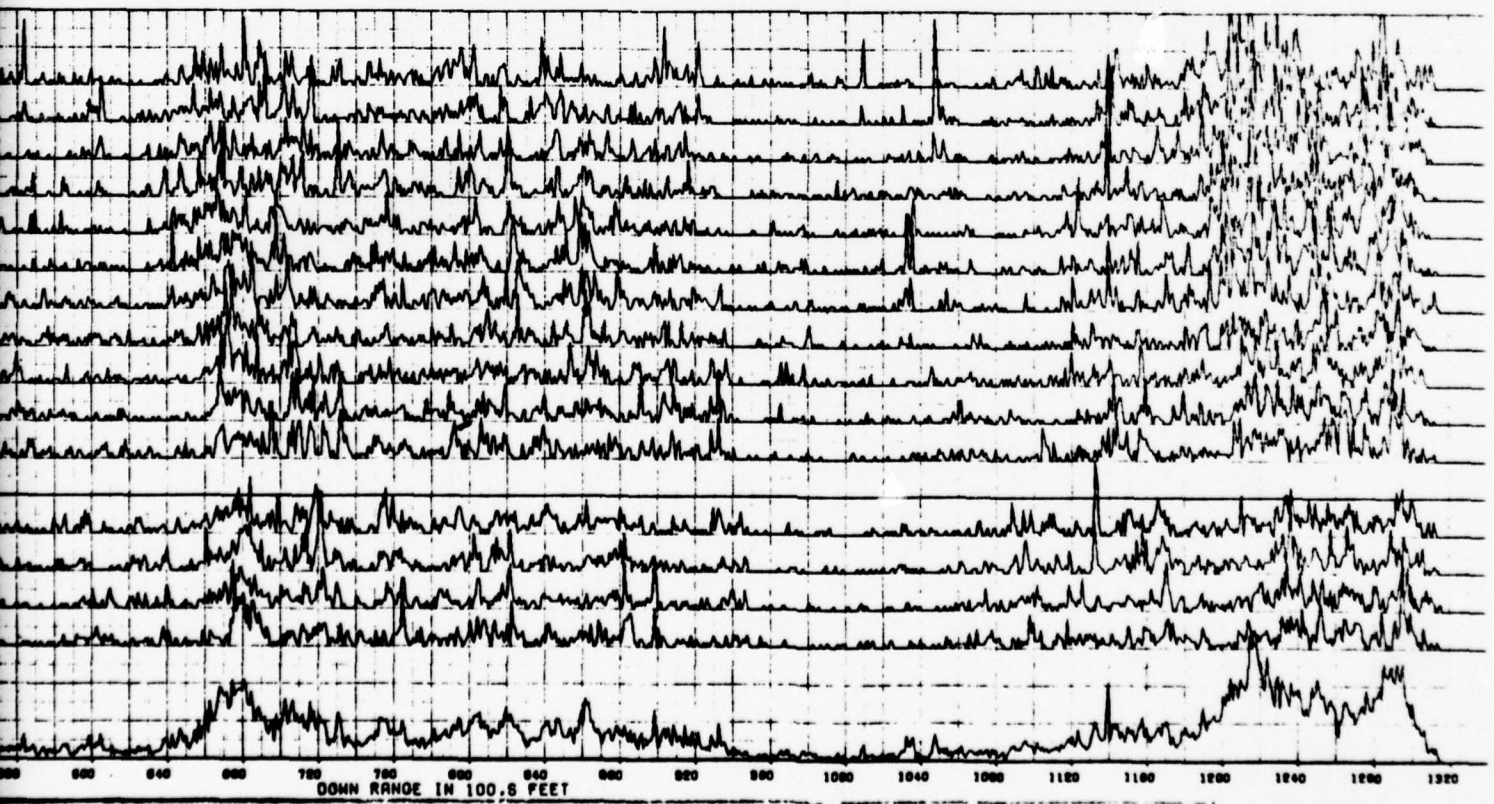
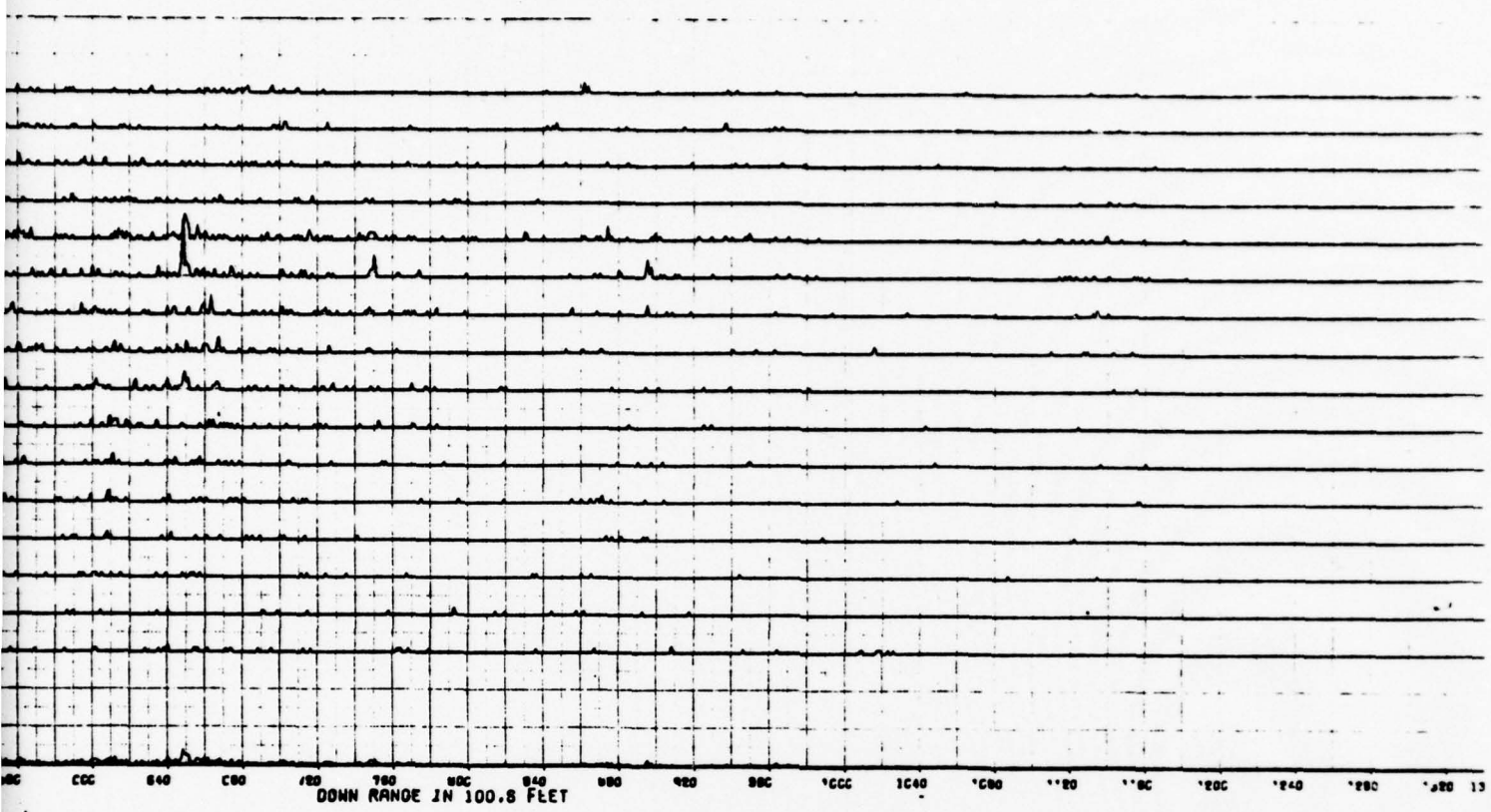
2

TAGSEA HIT MAP-1605-SS=4,ALT=2.2KFT DOWN WIND



TAGSEA HIT MAP-1606-SS=4,ALT=1.1KFT CROSS WIND



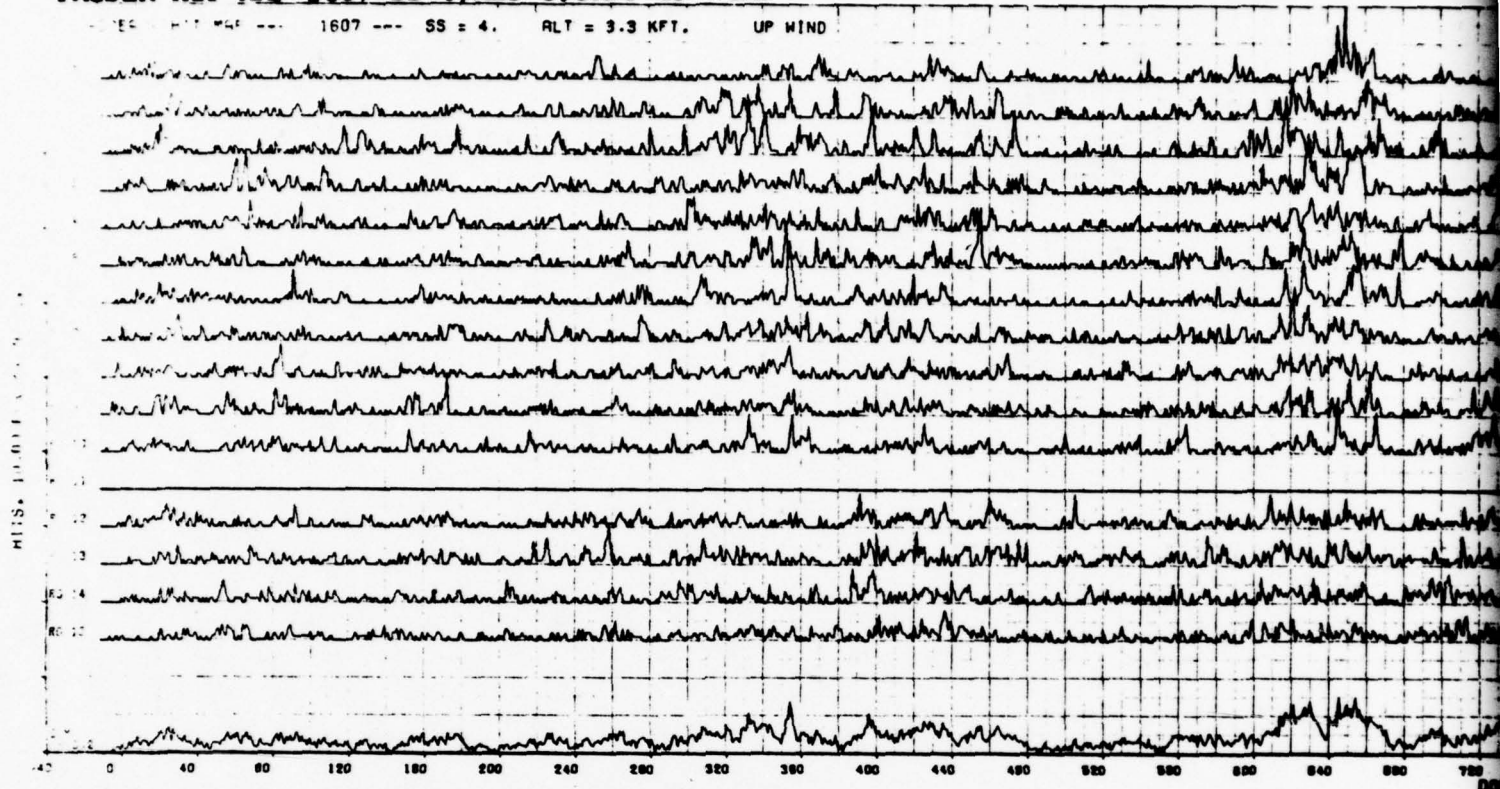


H-29/30

2

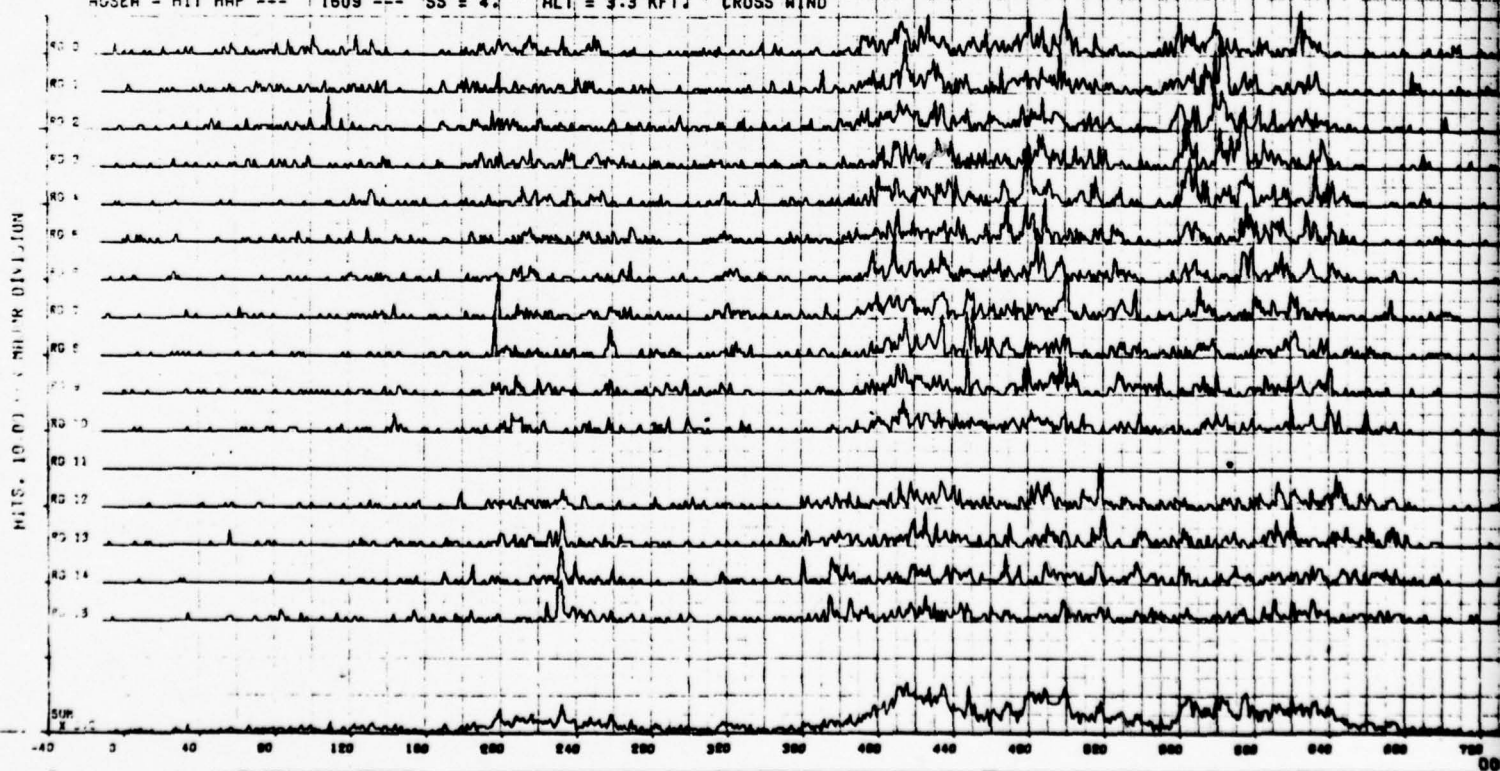
TAGSEA HIT MAP-1607-SS=4,ALT=3.3KFT UP WIND

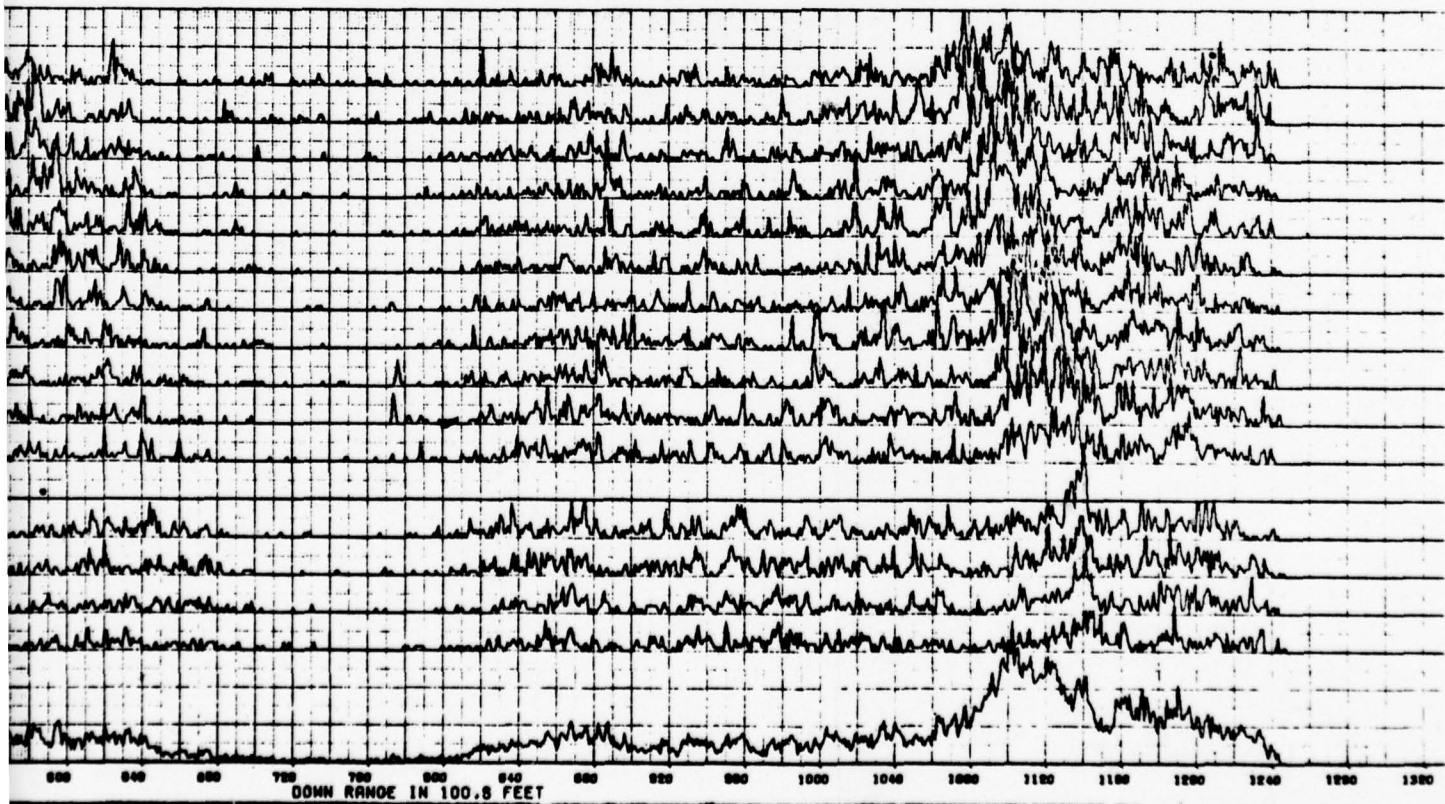
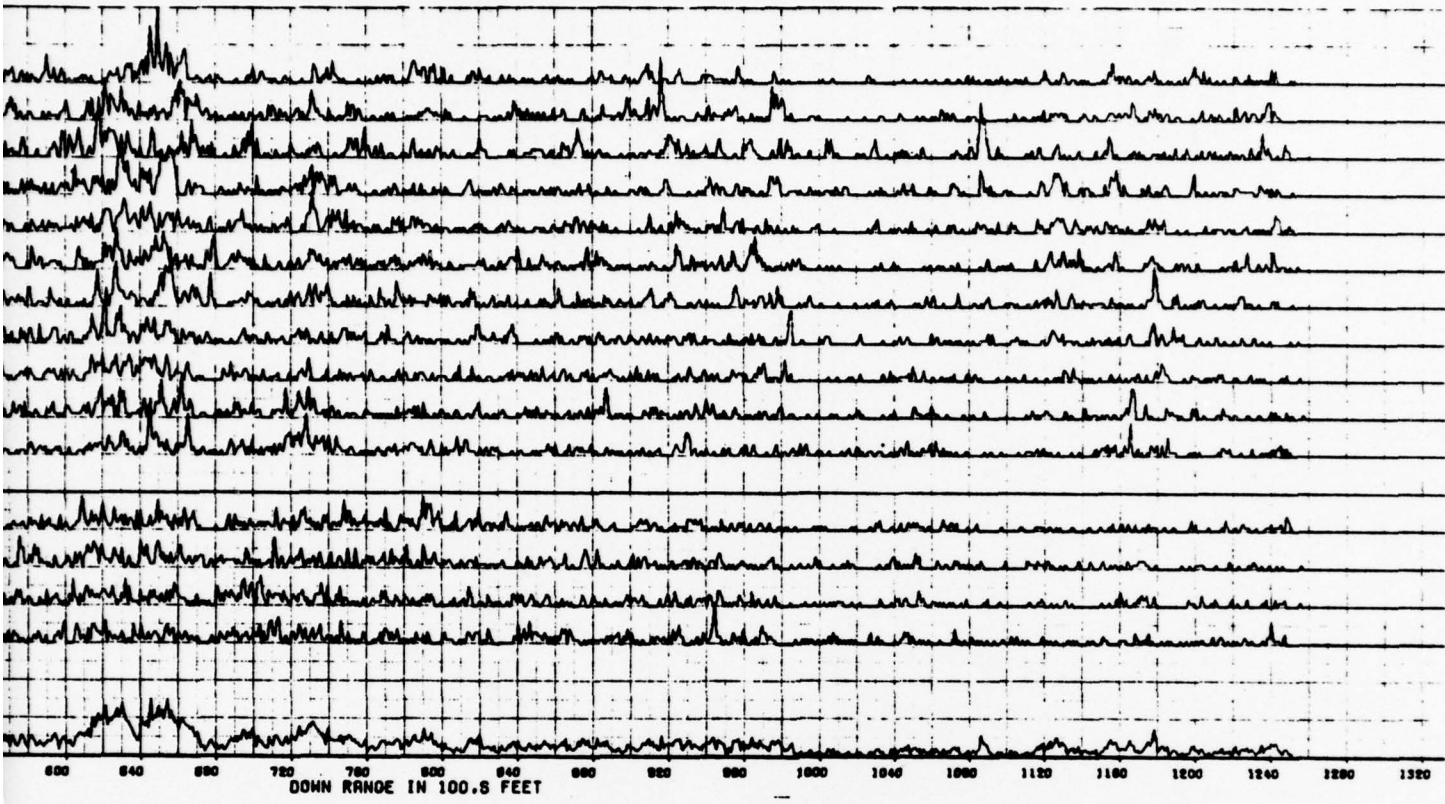
TAGSEA - HIT MAP --- 1607 --- SS = 4. ALT = 3.3 KFT. UP WIND



TAGSEA HIT MAP-1609-SS=4,ALT=3.3KFT CROSS WIND

TAGSEA - HIT MAP --- 1609 --- SS = 4. ALT = 3.3 KFT. CROSS WIND

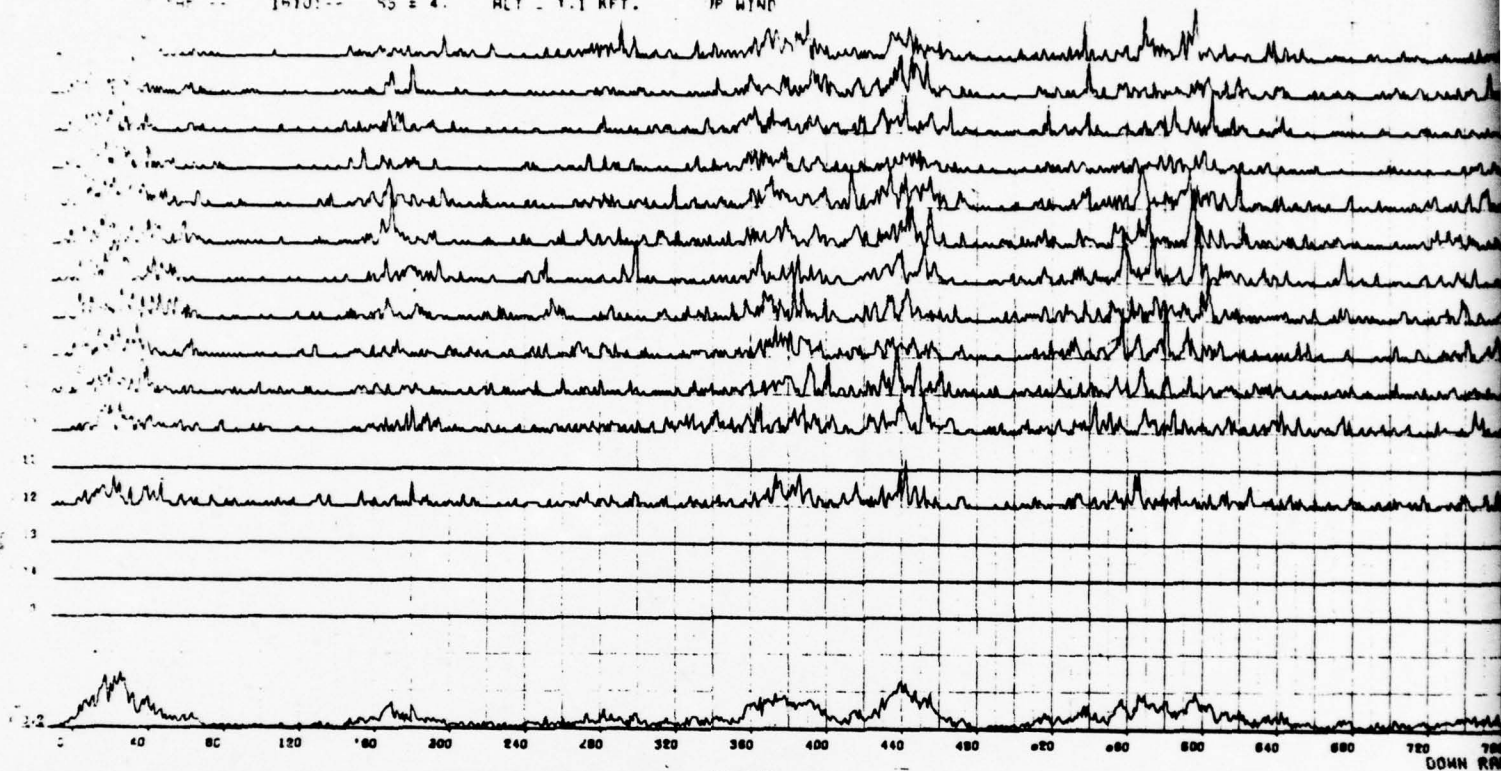




2

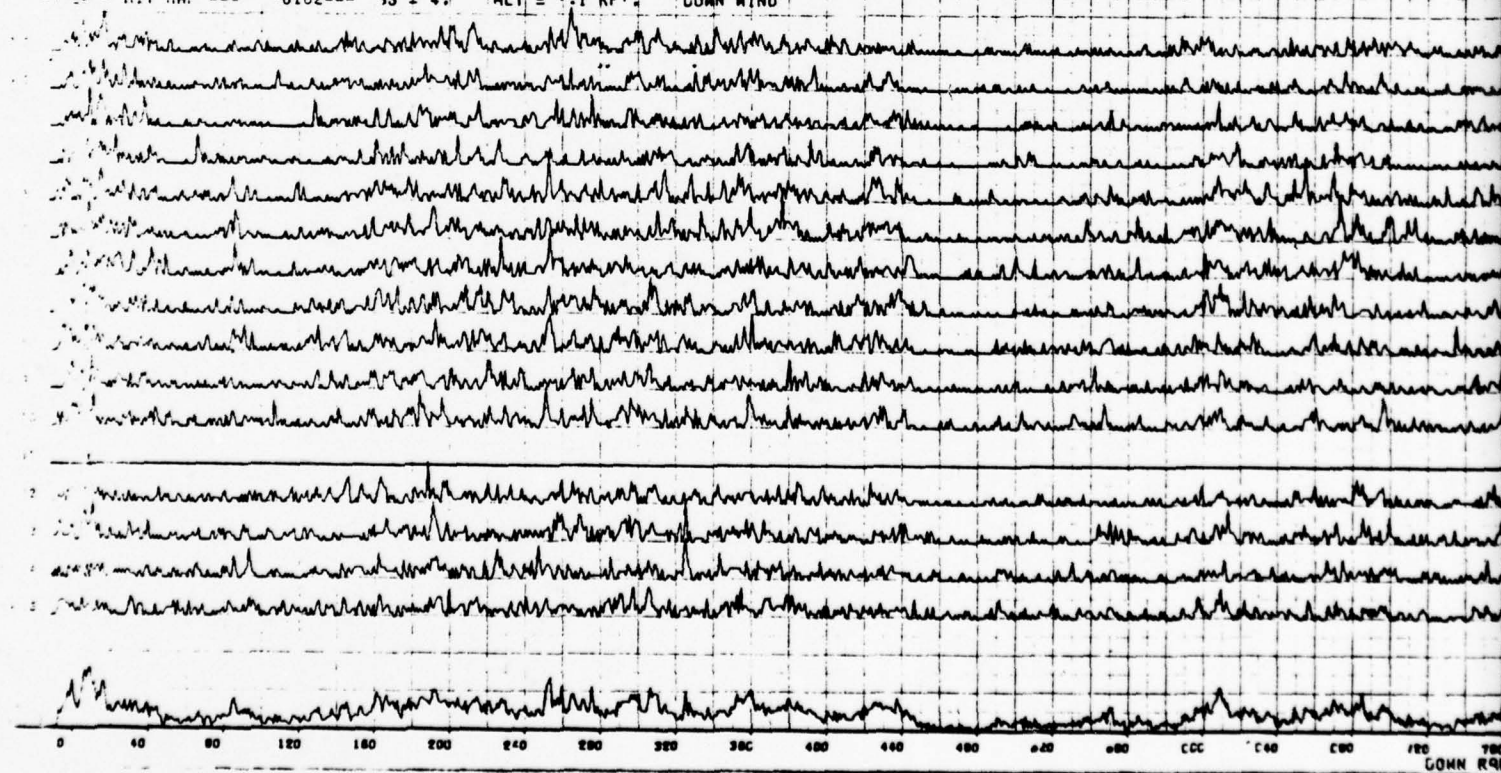
AGSEA HIT MAP-16101-SS=4,ALT=1.1KFT UP WIND

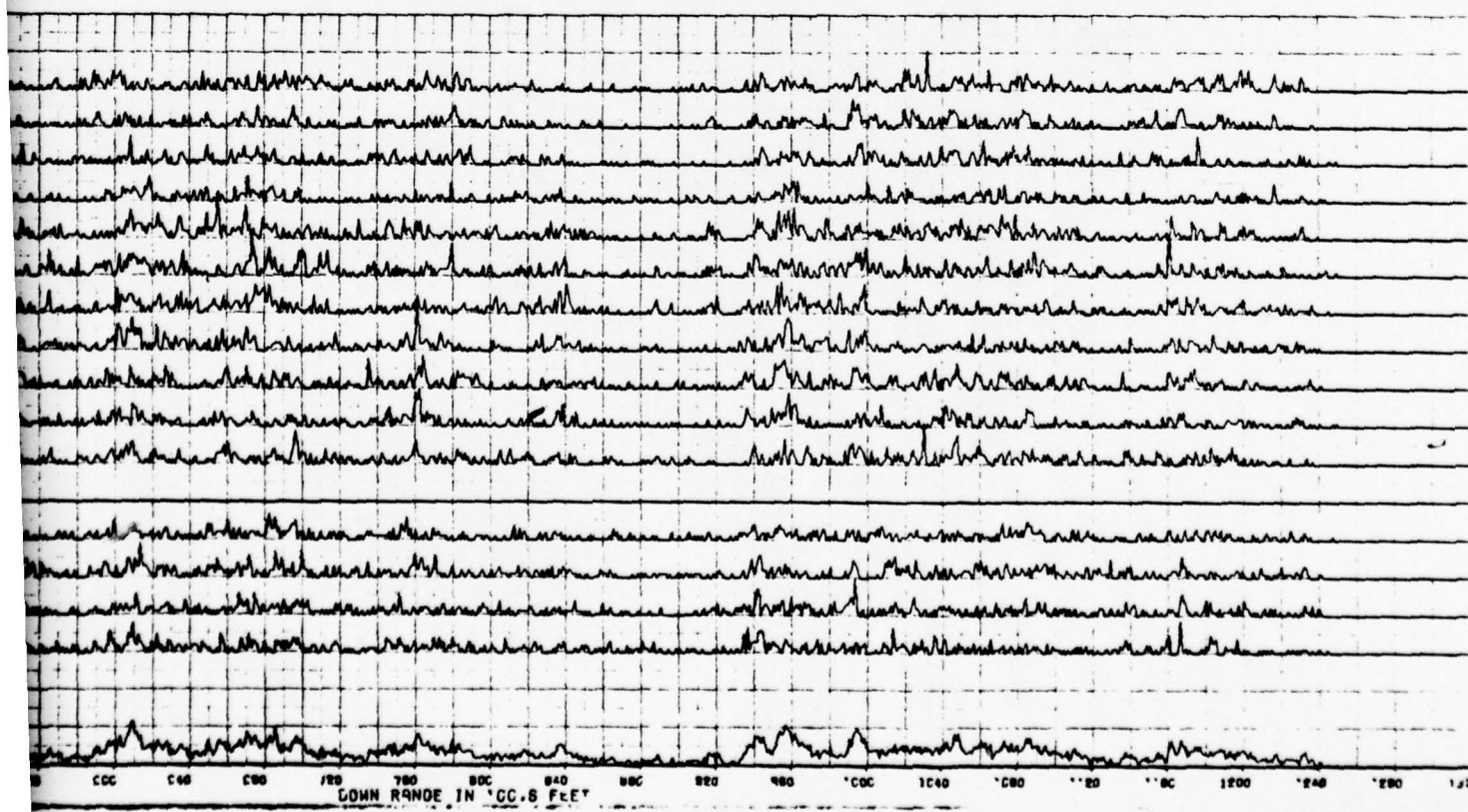
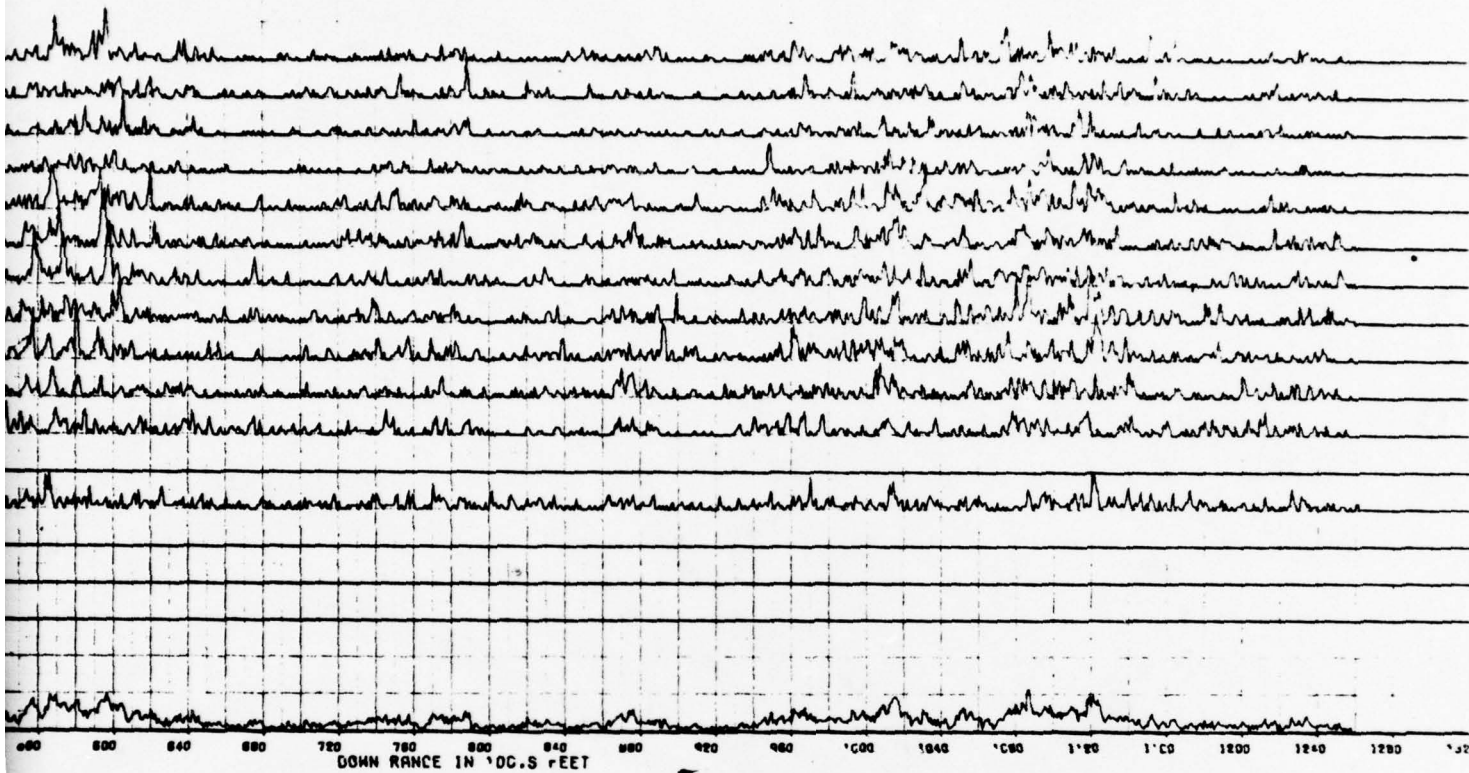
16101-SS=4,ALT=1.1KFT,UP WIND



TAGSEA HIT MAP-16102-SS=4,ALT=1.1KFT DOWN WIND

16102-SS=4,ALT=1.1KFT,DOWN WIND

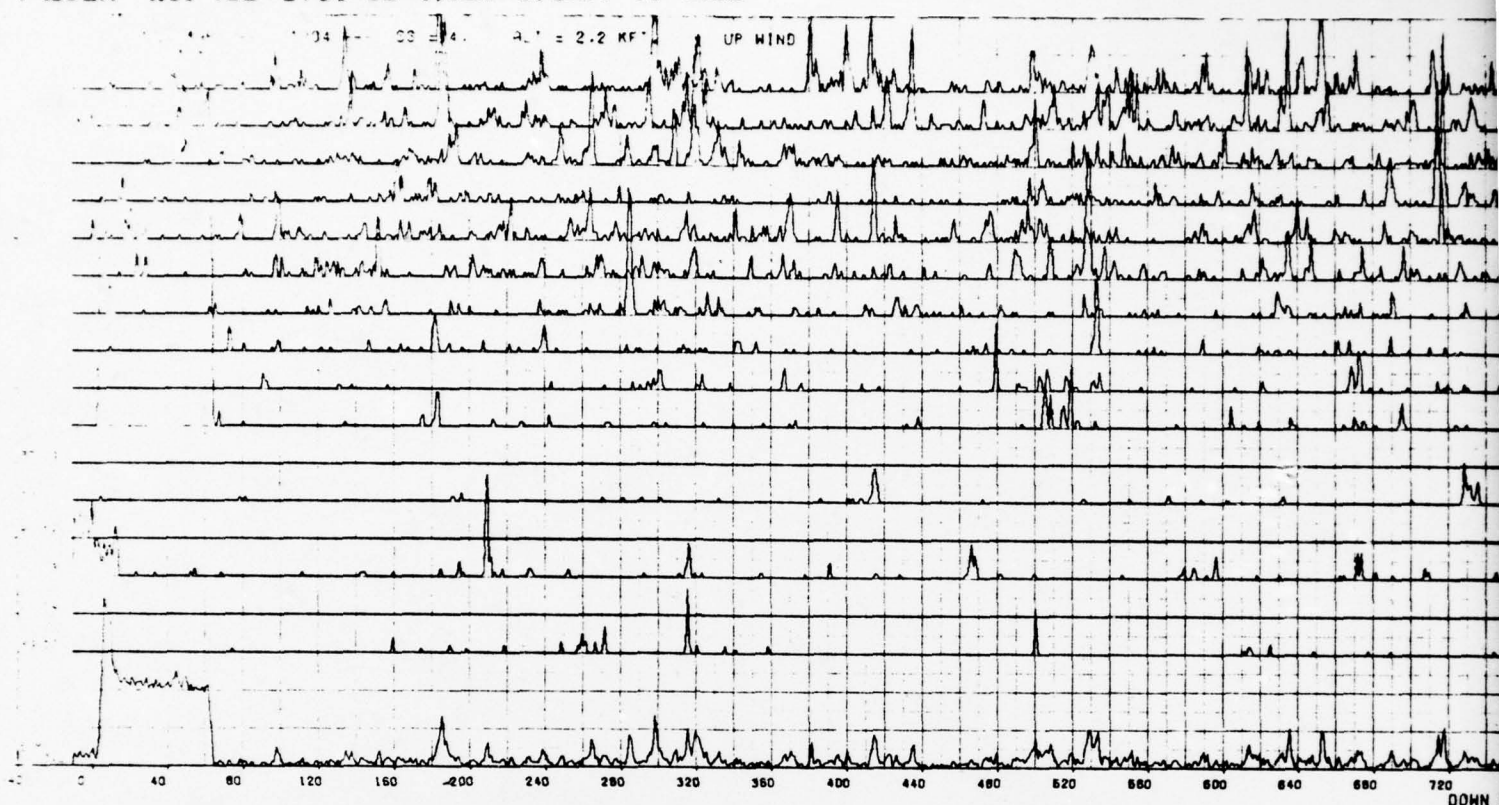




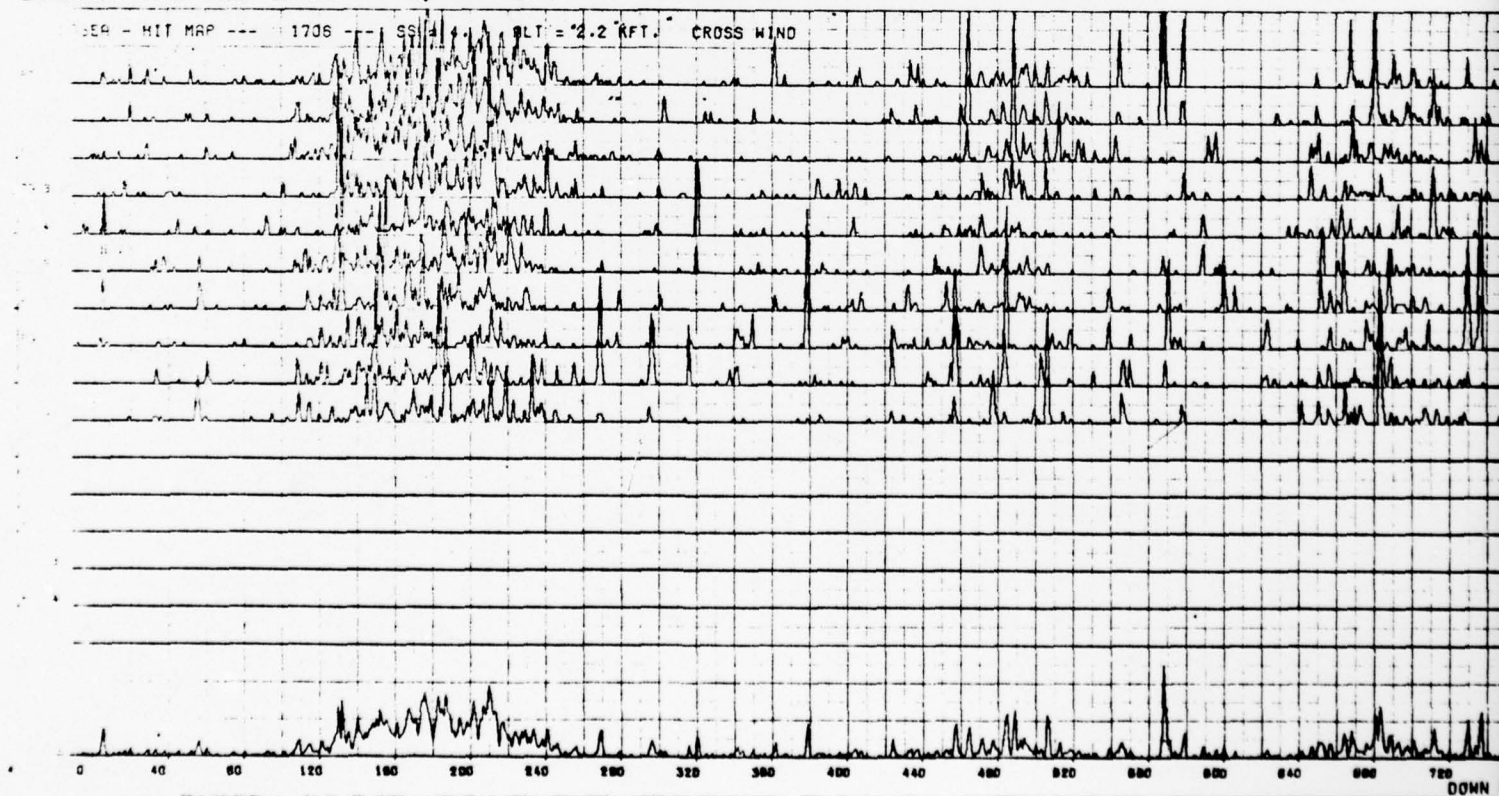
H-33/34

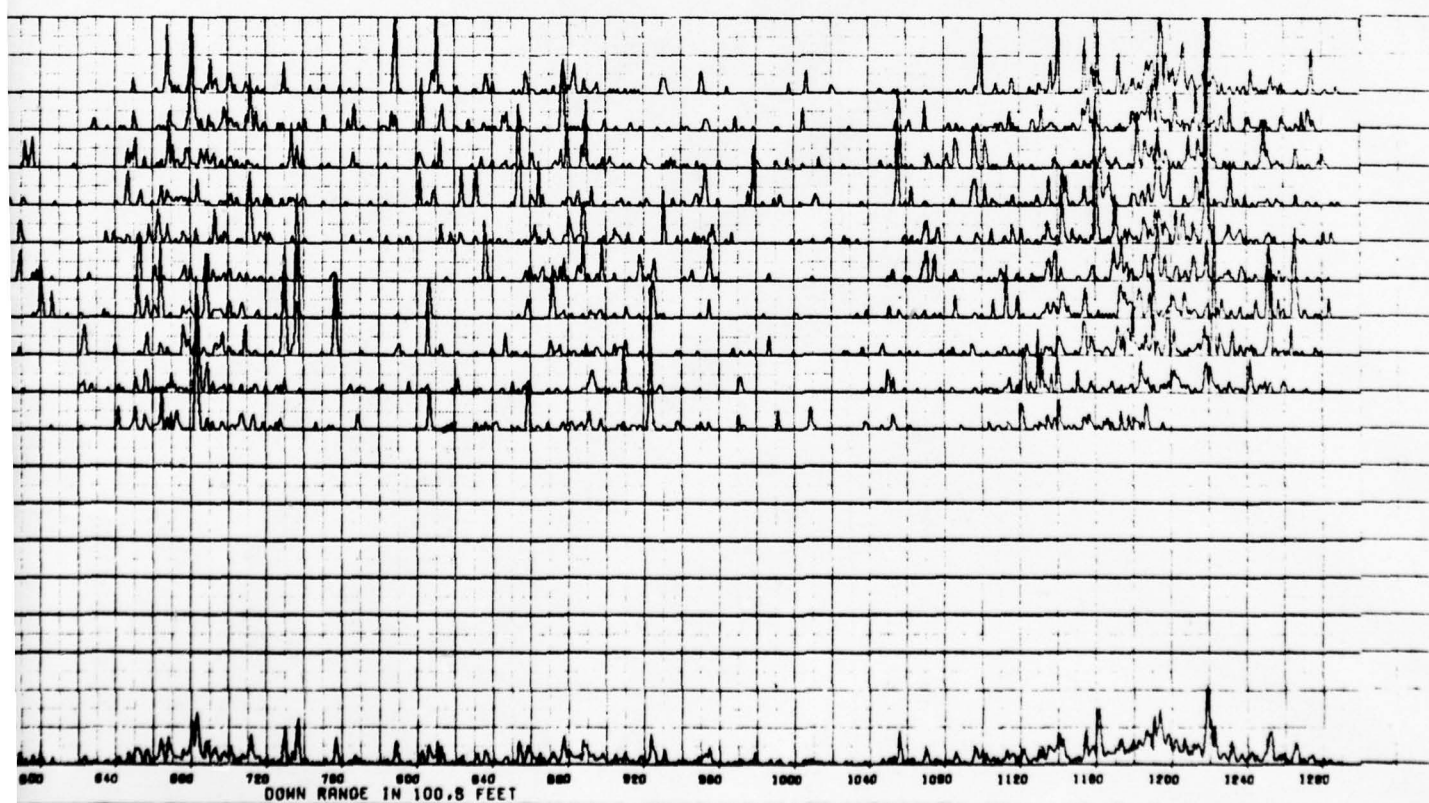
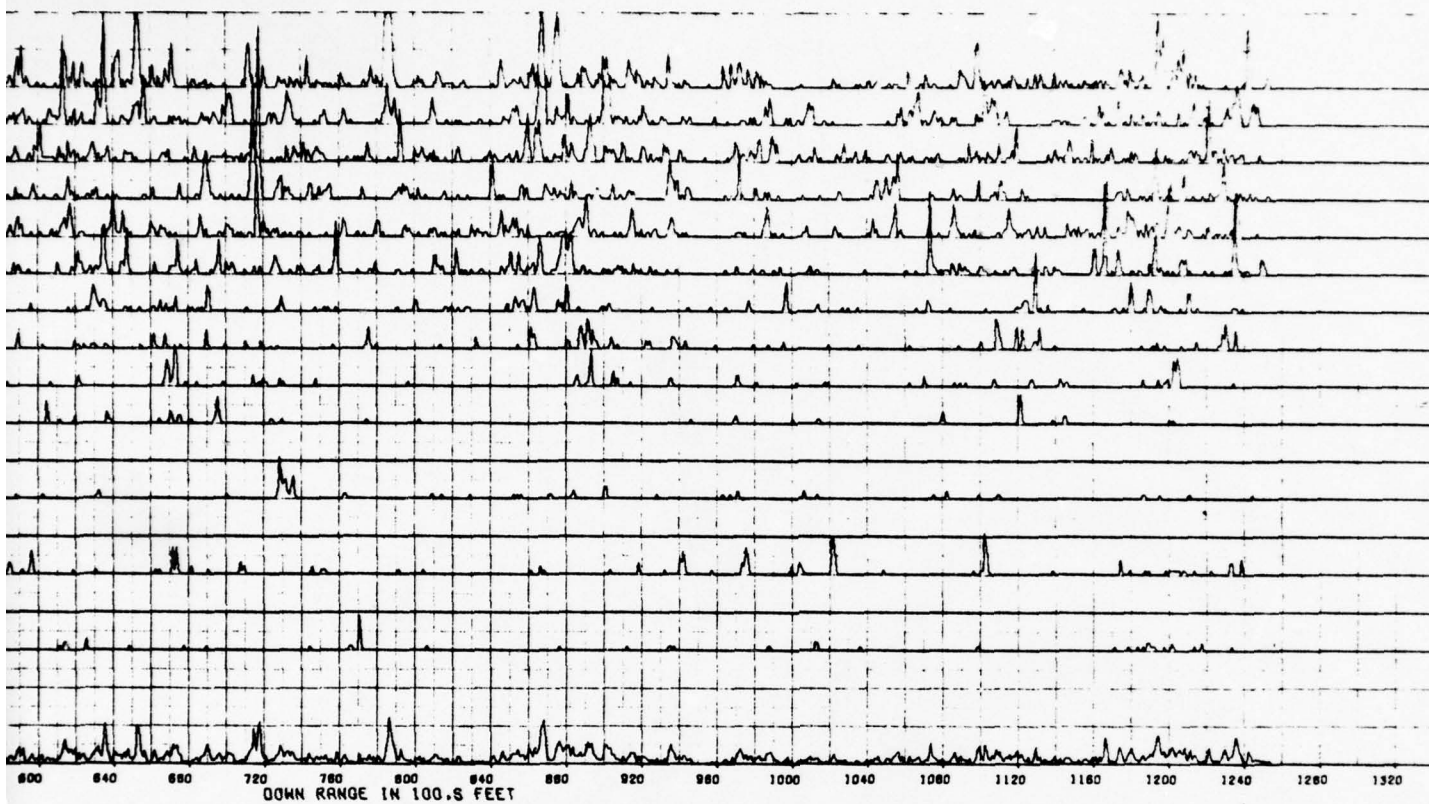
2

TAGSEA HIT MAP-1704-SS=4,ALT=2.2KFT UP WIND



TAGSEA HIT MAP-1706-SS=4,ALT=2.2KFT CROSS WIND

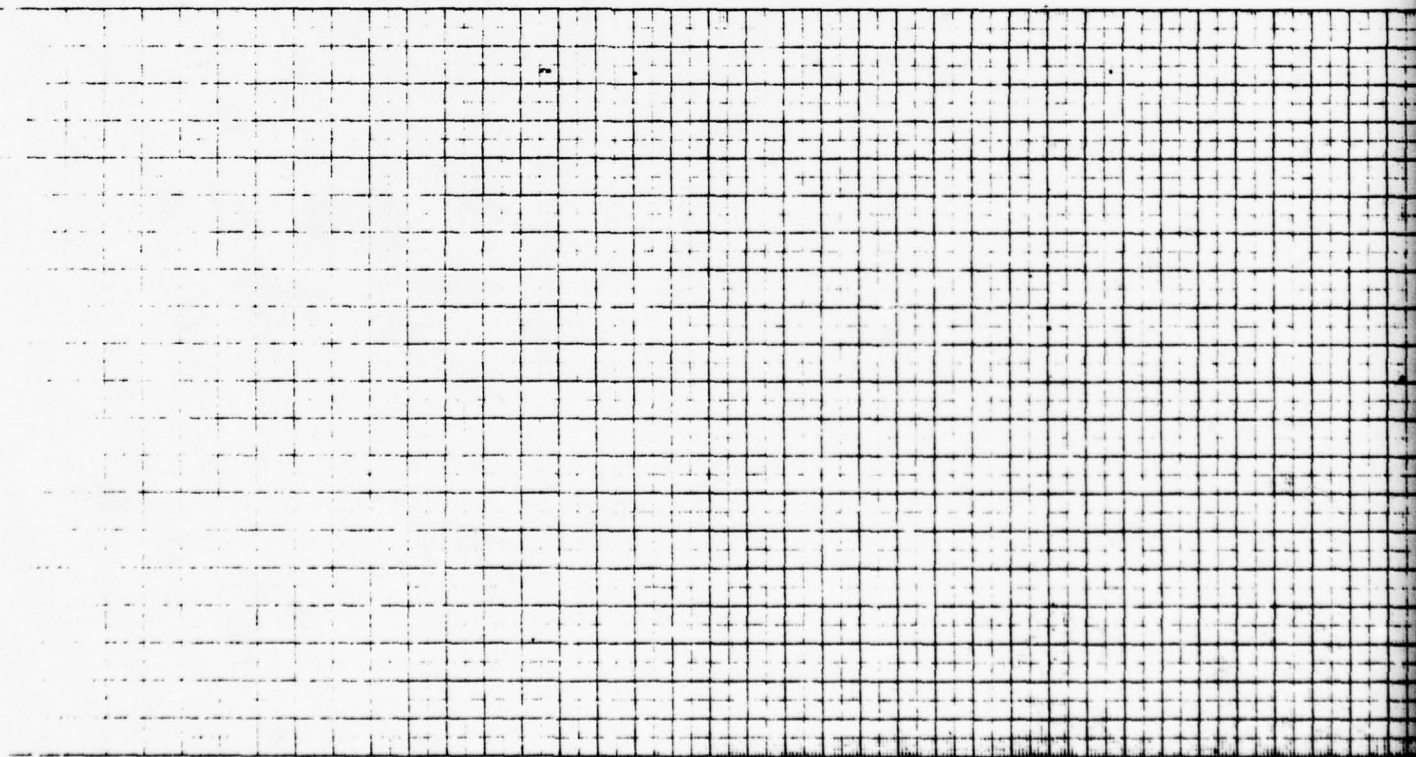
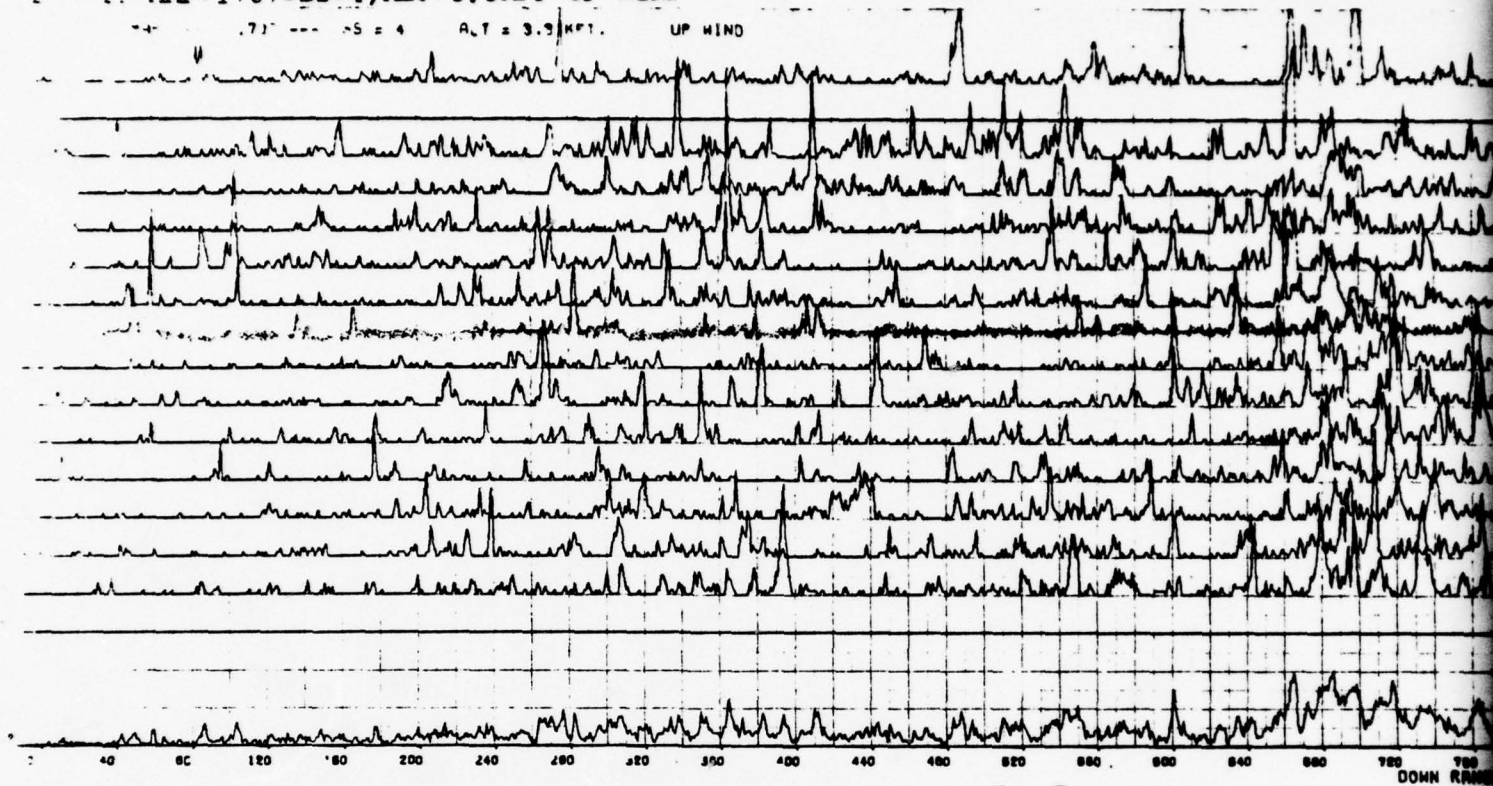


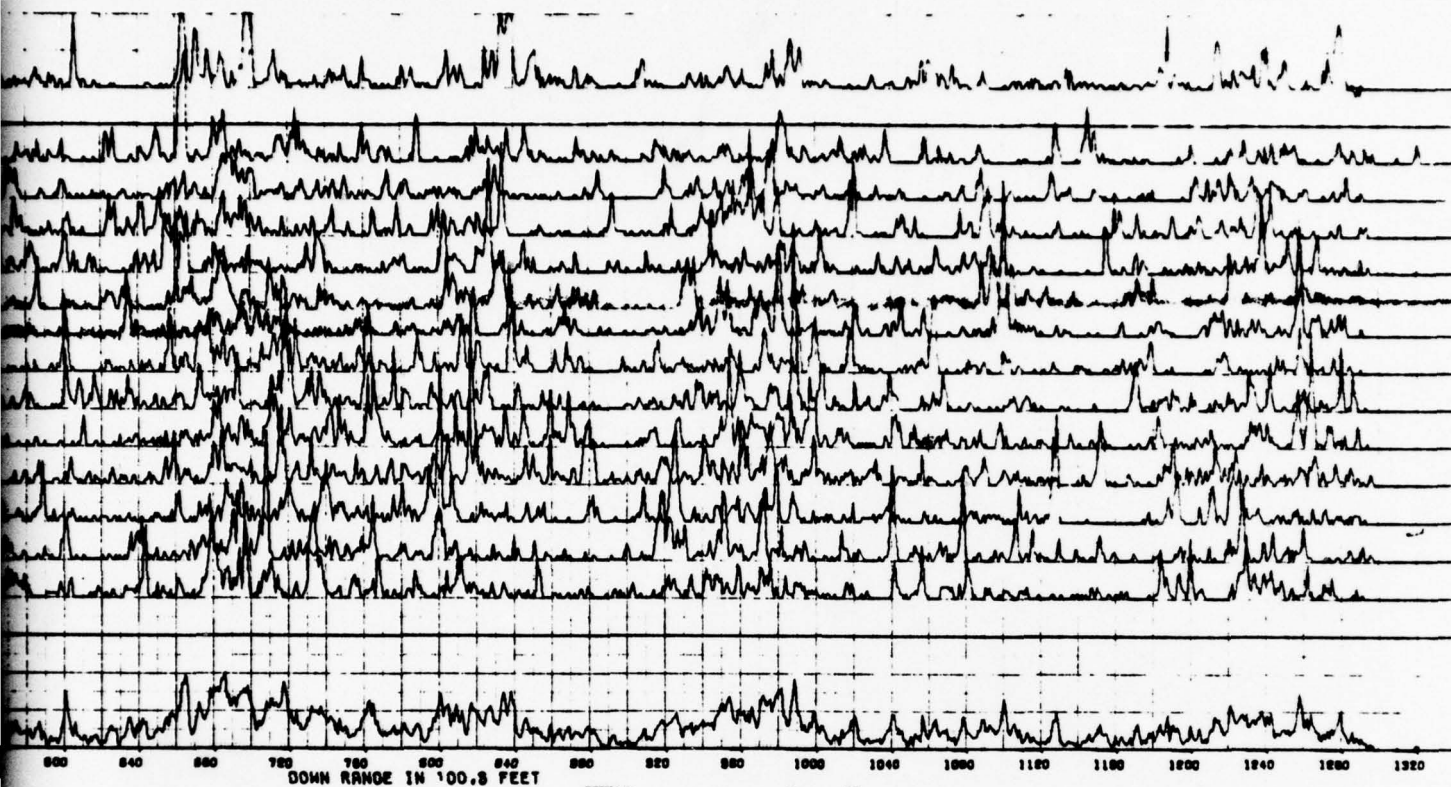


2

IT MAP-1707-SS=4, ALT=3.3KFT UP WIND

717 --- SS = 4 ALT = 3.3 KFT. UP WIND





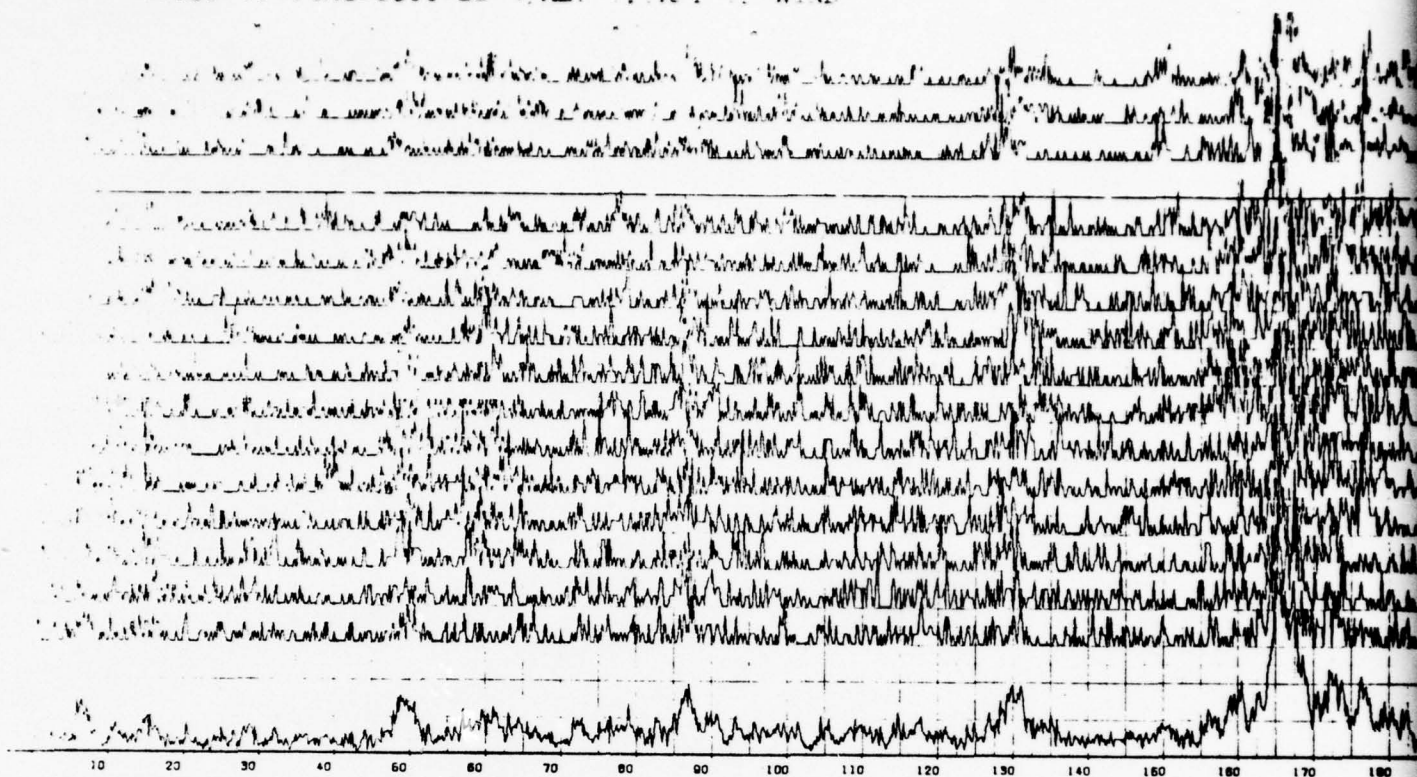
UNCLASSIFIED

1.2 Hit Counts vs. Time

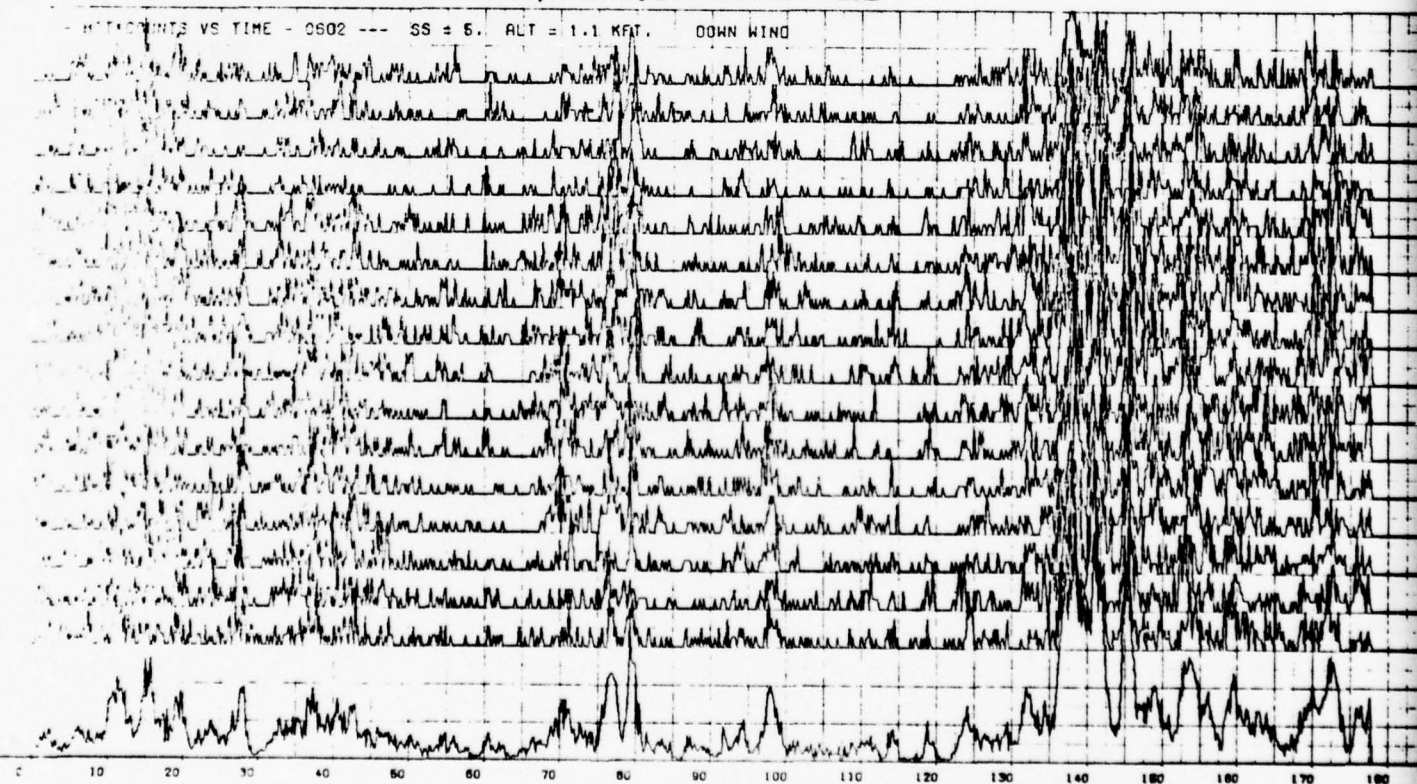
1.2.1 Hit Counts vs. Time (Fine Grained)

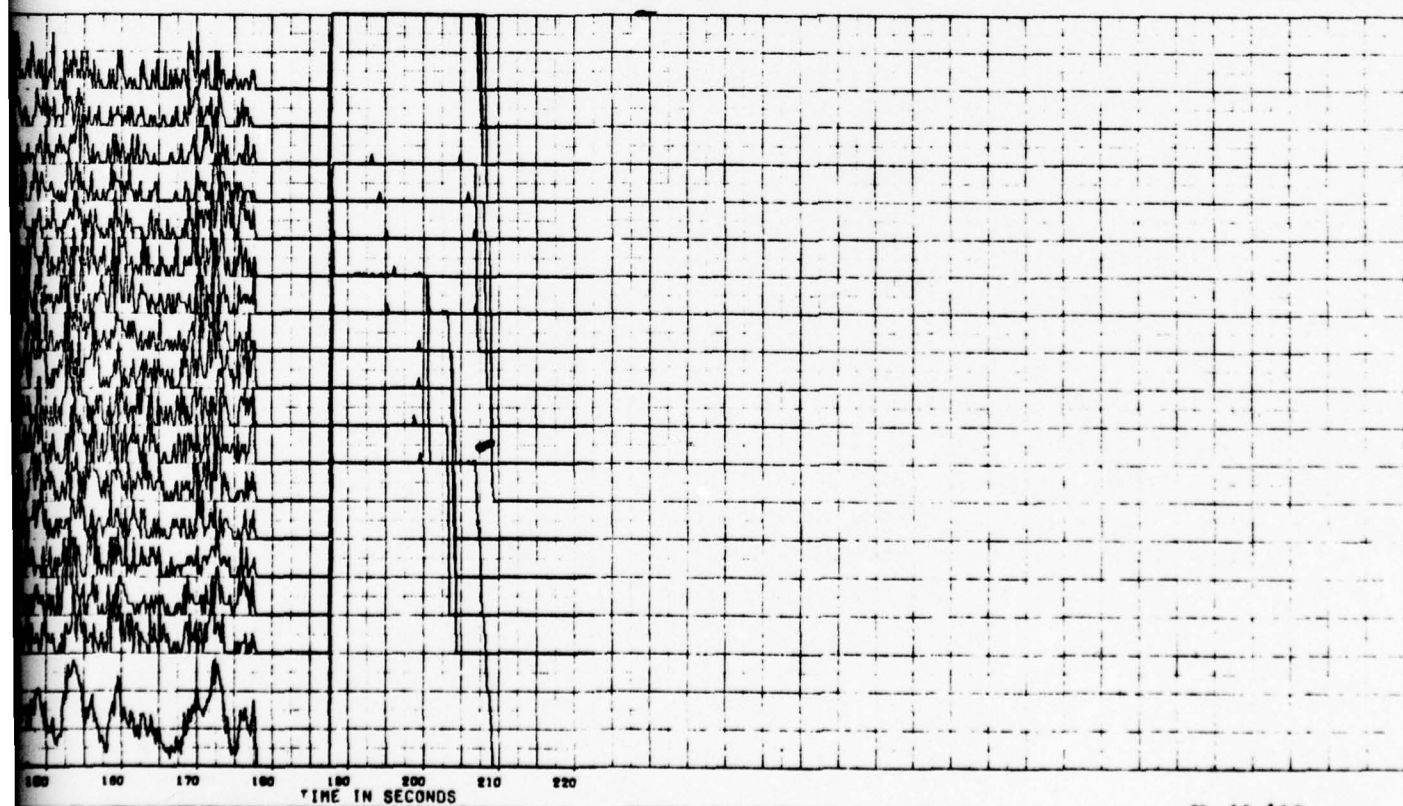
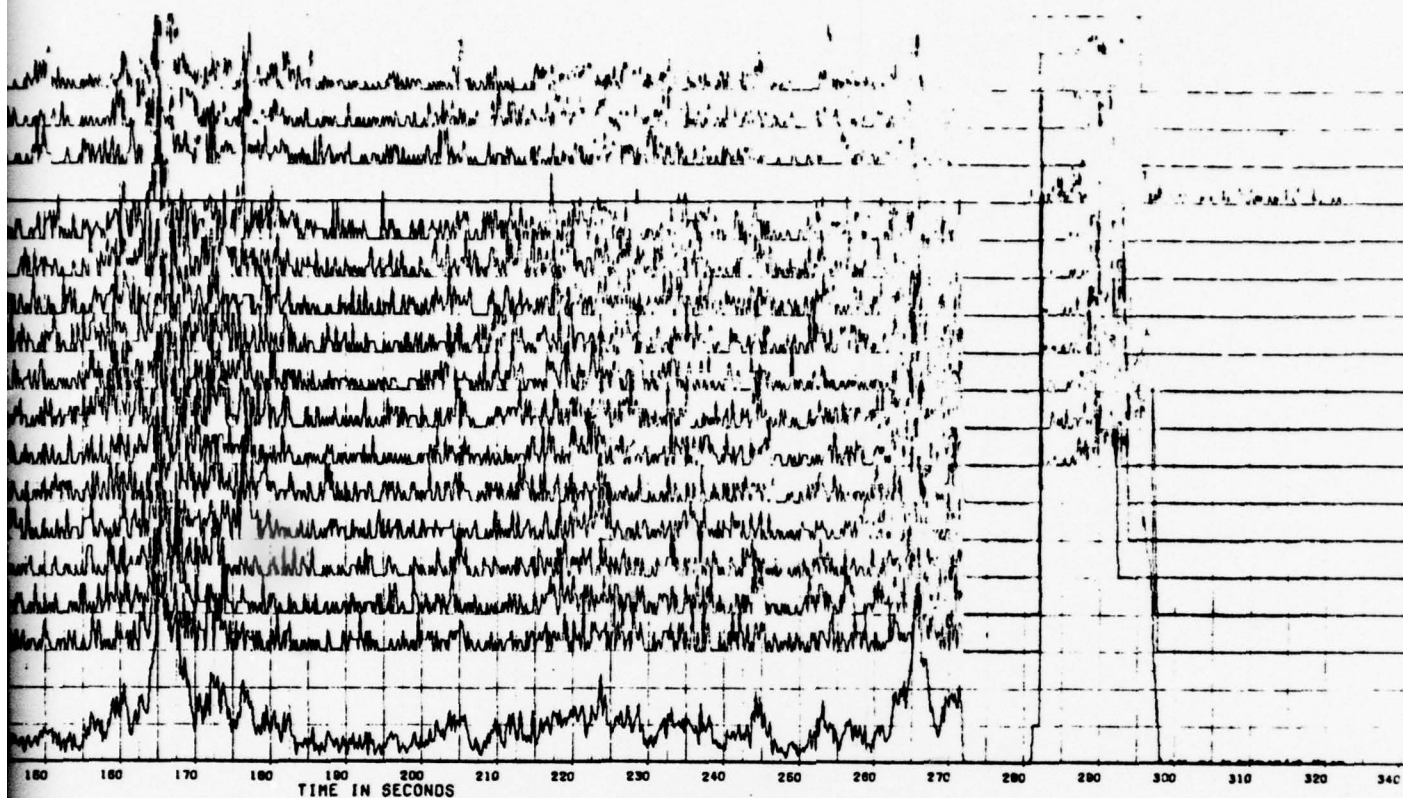
Hit counts vs. time plots given here characterize mean hits exceeding a nominal 10^{-3} threshold per block of time in each range gate. Fine grain hit counts were summed over a block of 20 FFT time frames (about 0.183 second) and normalized by 20.

HIT COUNTS vs TIME-0601-SS=5,ALT=1.1KFT DOWN WIND



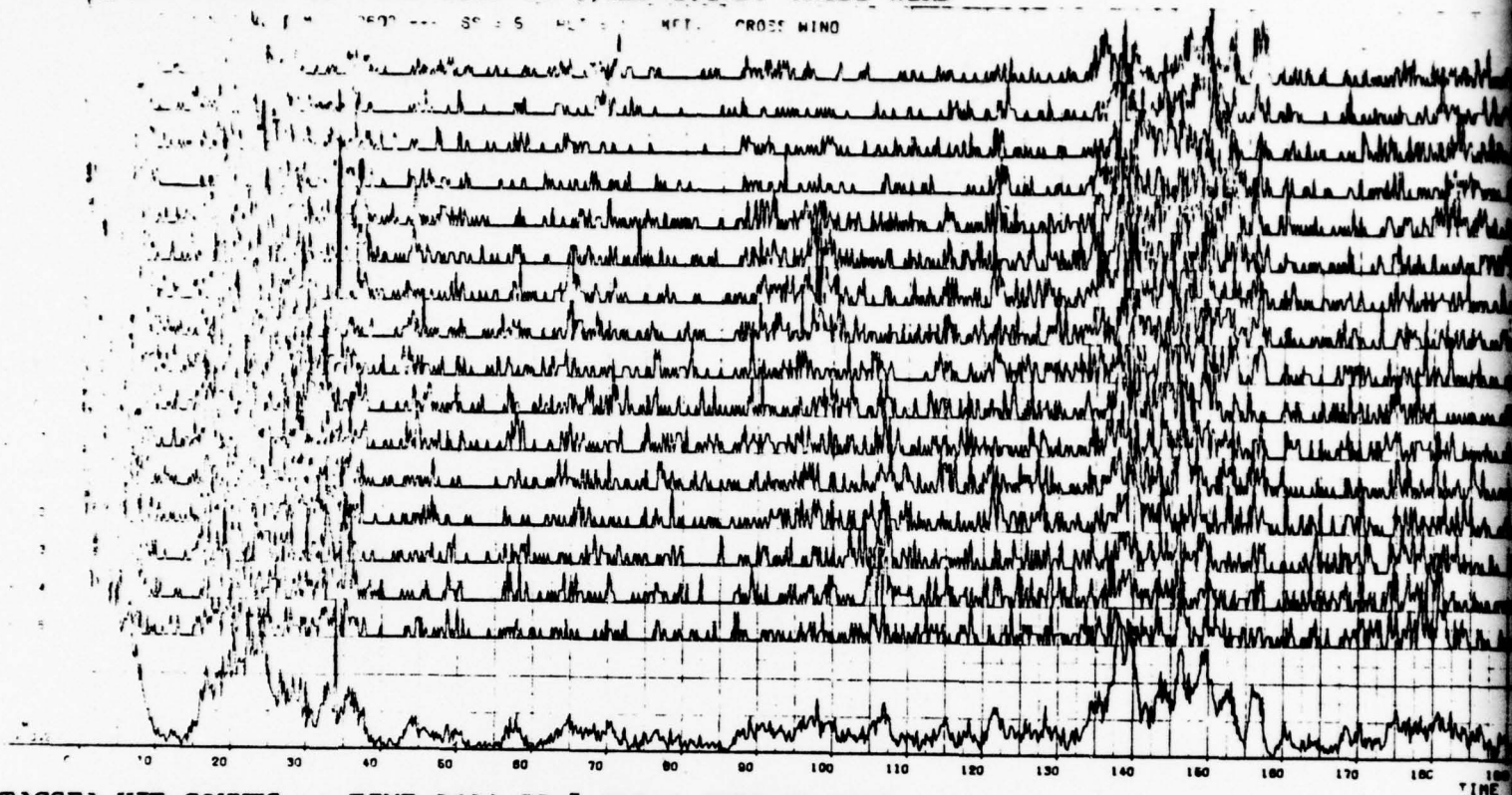
TAGSEA HIT COUNTS vs TIME-0602-SS=5,ALT=1.1KFT DOWN WIND





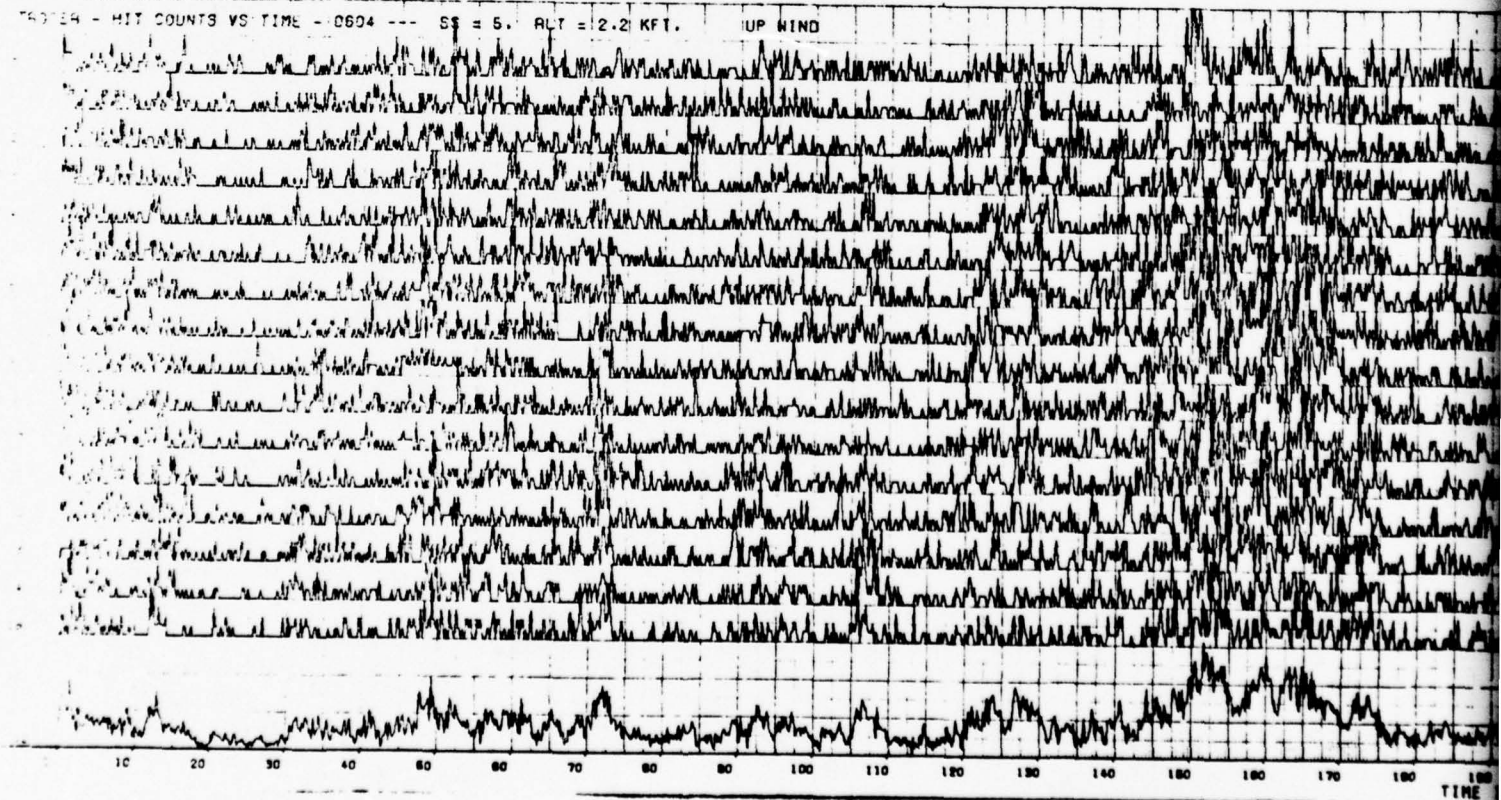
H-41/42

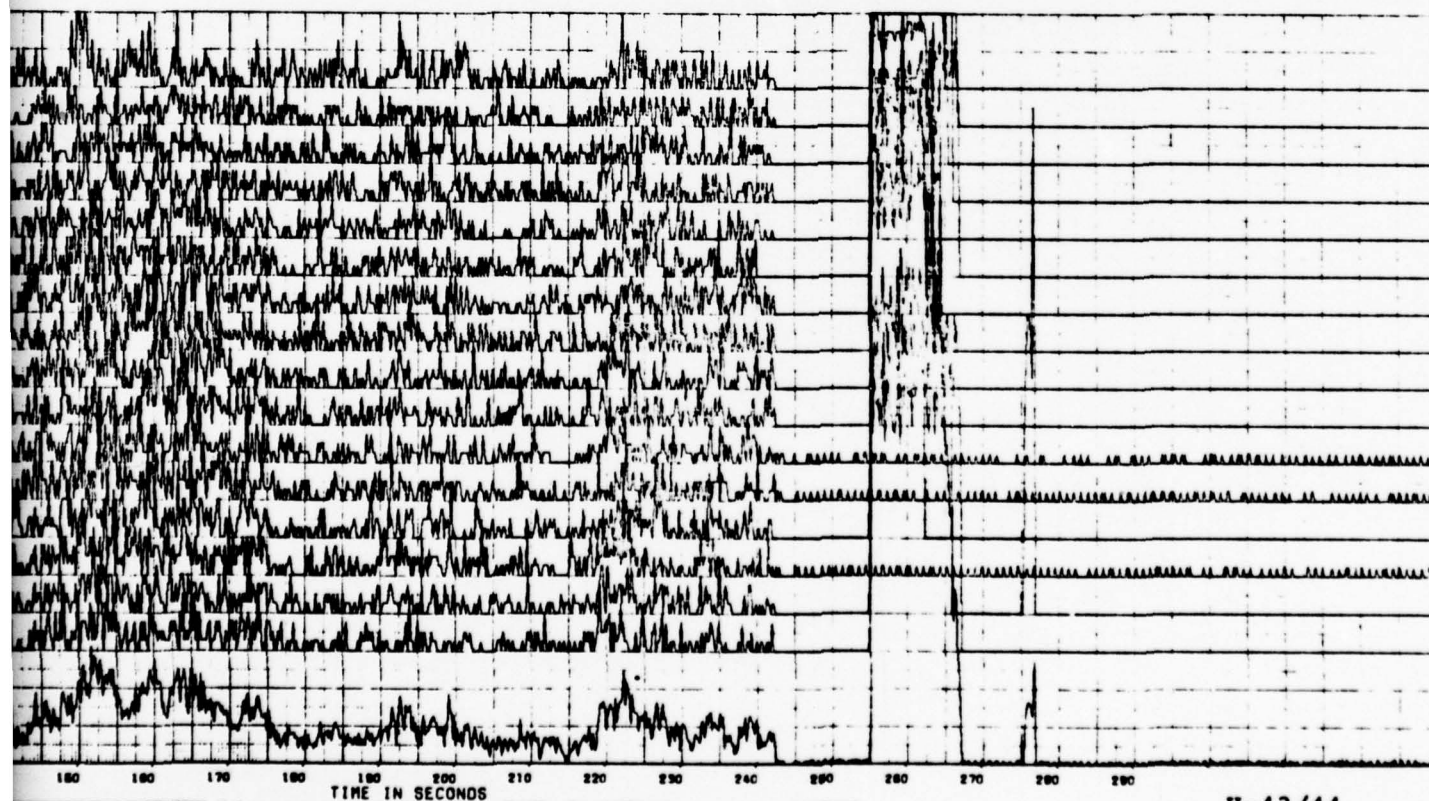
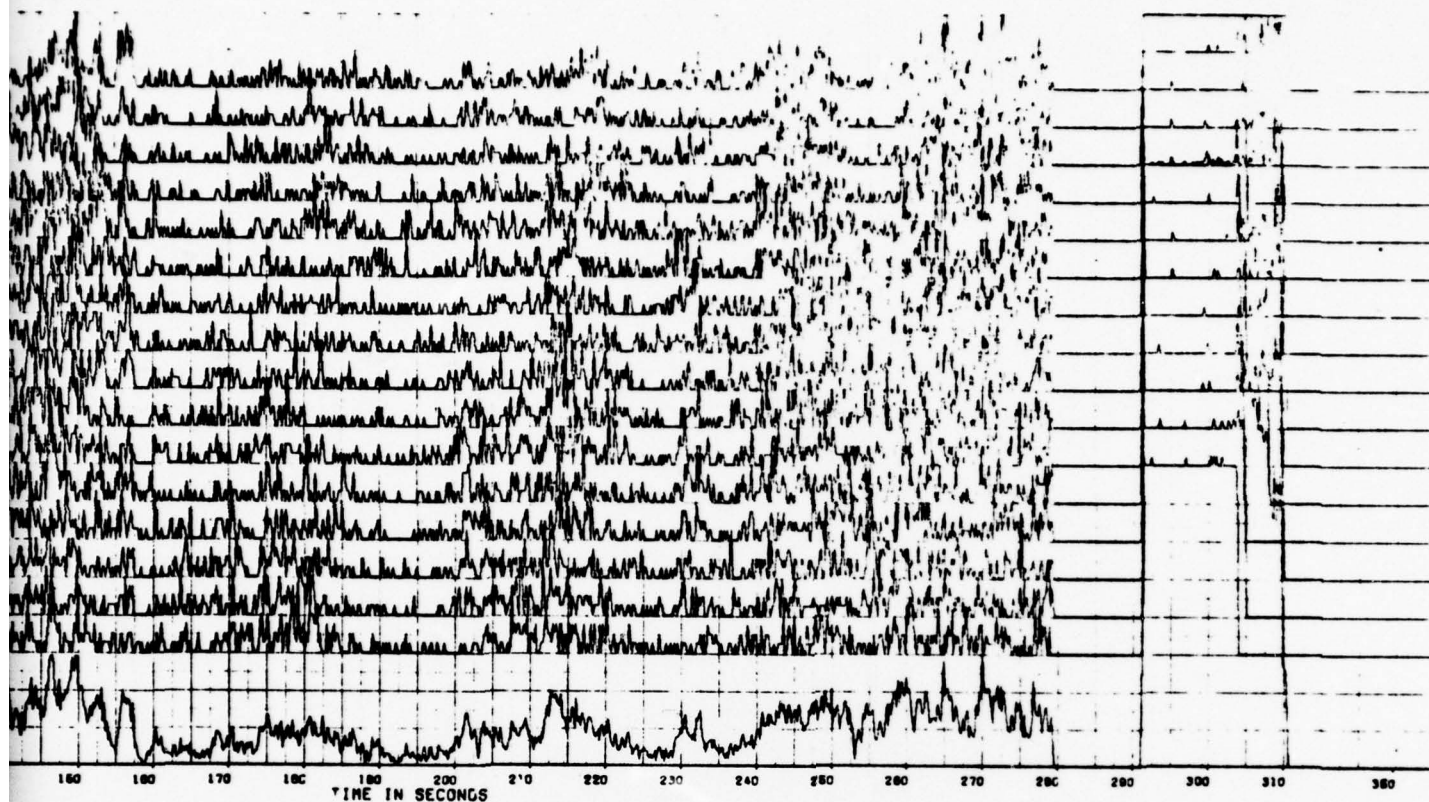
SEA HIT COUNTS vs TIME-0603-SS=5,ALT=1.1KFT CROSS WIND



TAGSEA HIT COUNTS vs TIME-0604-SS=5,ALT=2.2KFT UP WIND

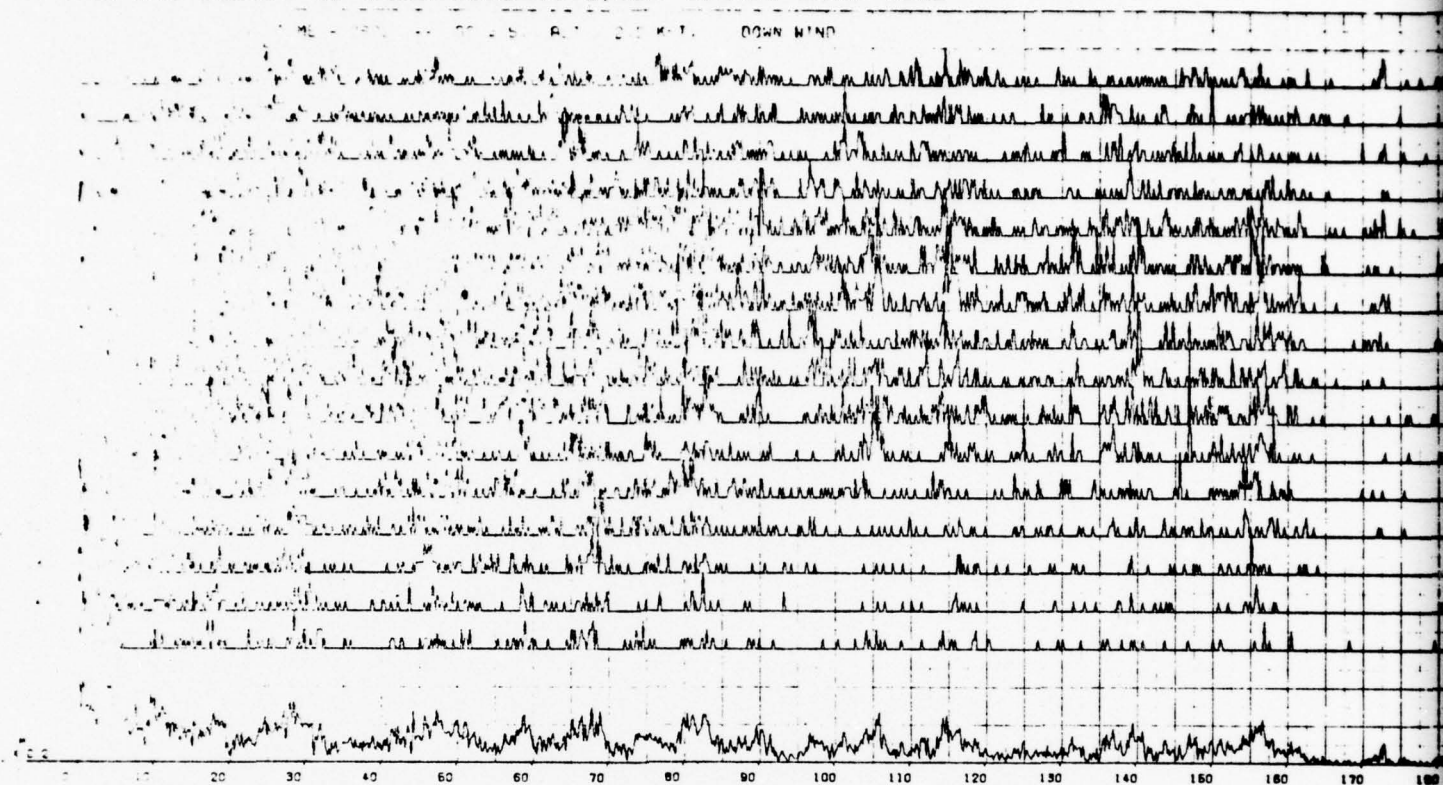
TAGSEA - HIT COUNTS VS TIME - 0604 --- SS = 5. ALT = 2.2 KFT. UP WIND



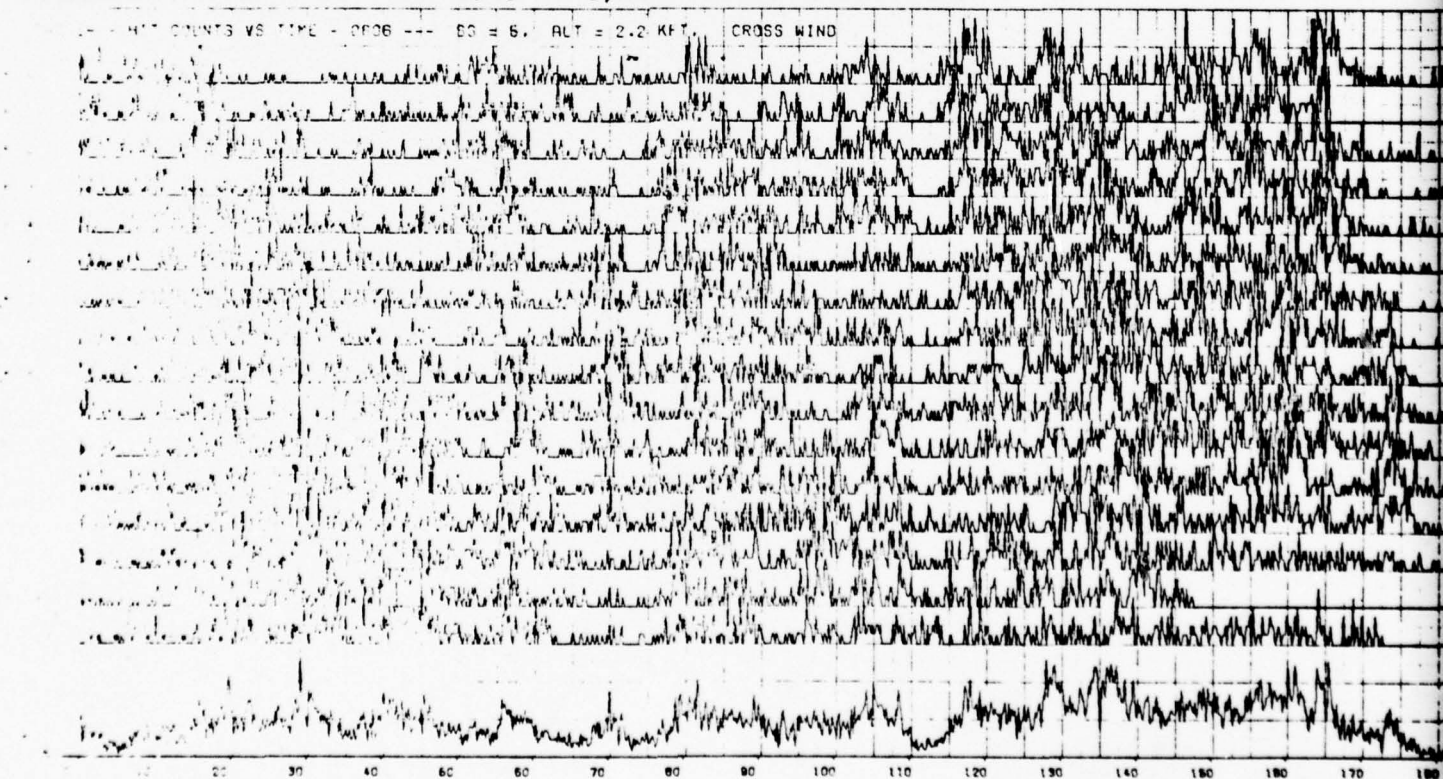


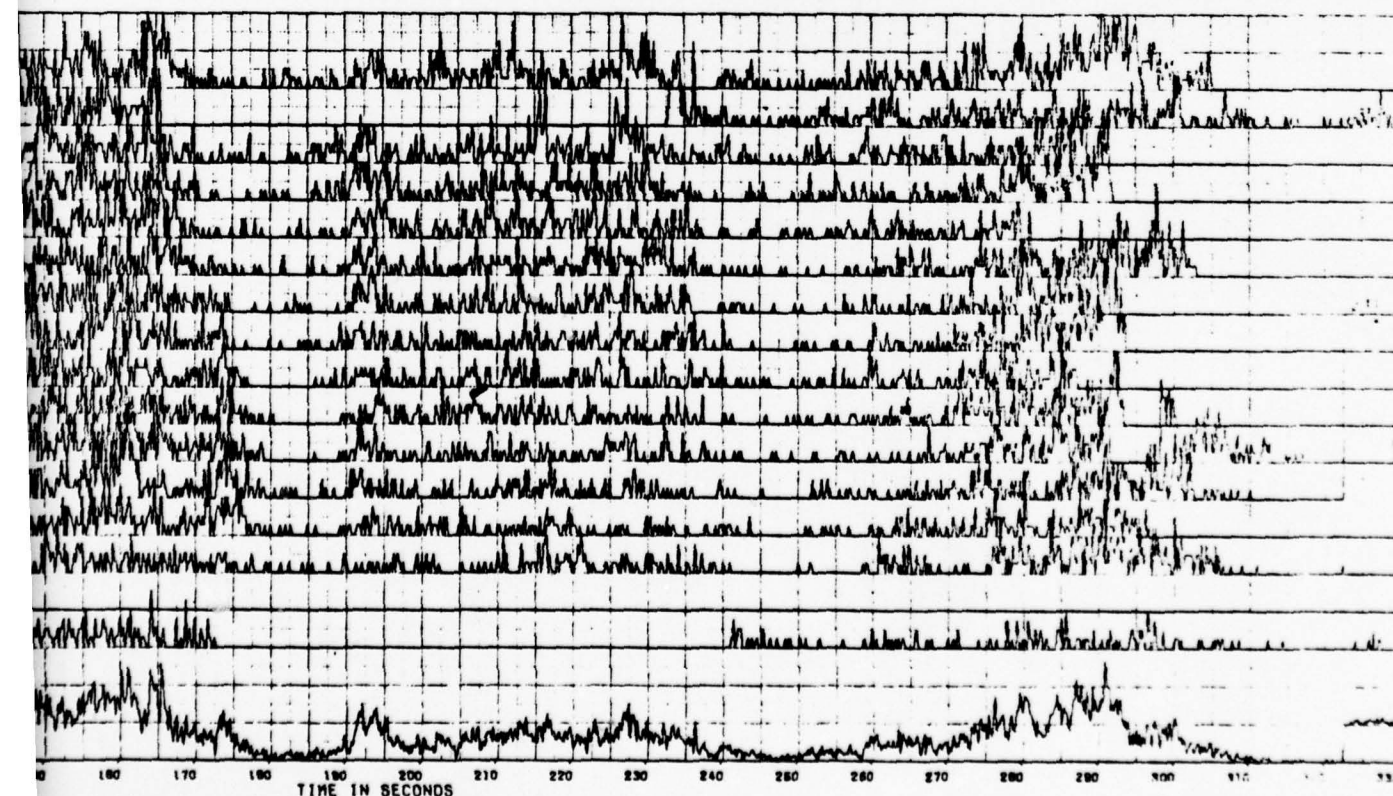
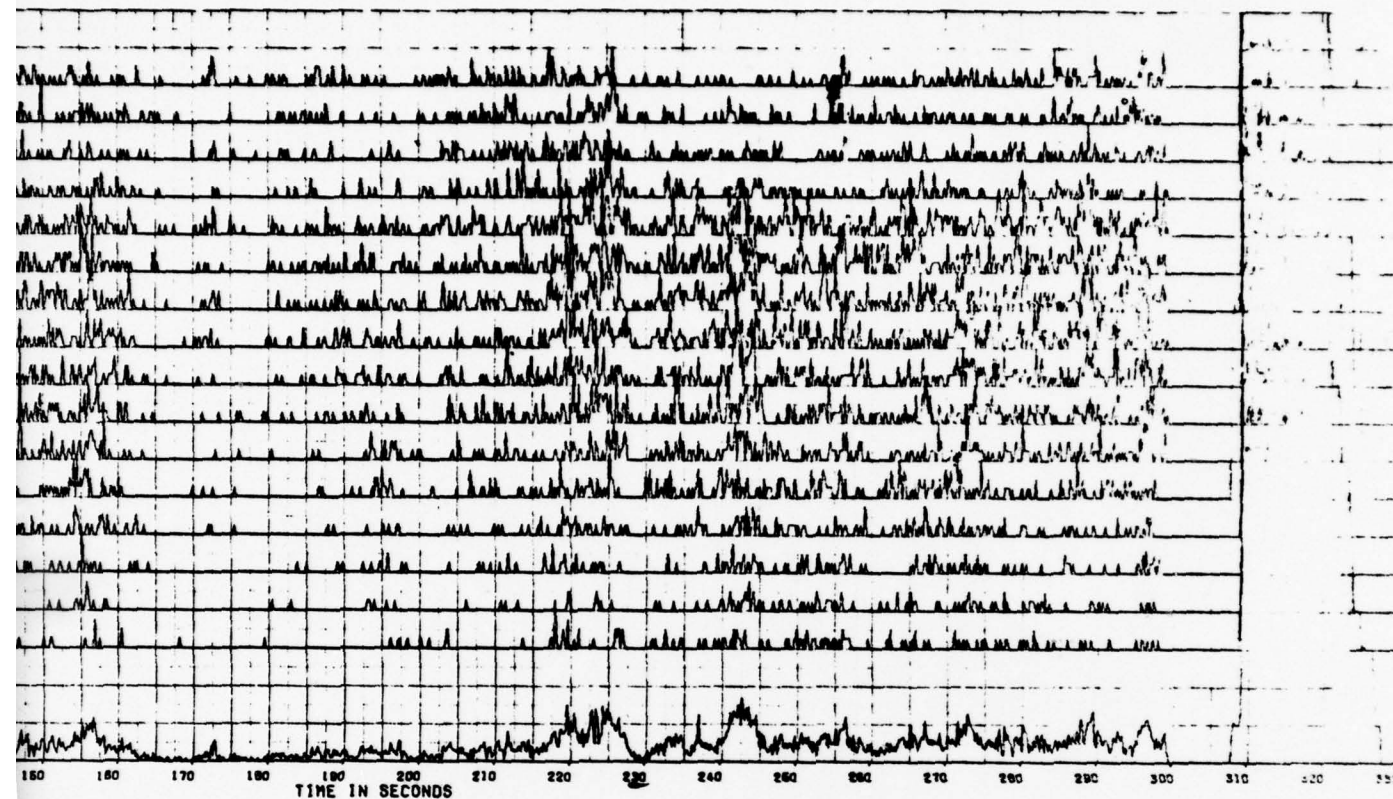
H-43/44

SEA HIT COUNTS vs TIME-0605-SS=5, ALT=2.2KFT DOWN WIND



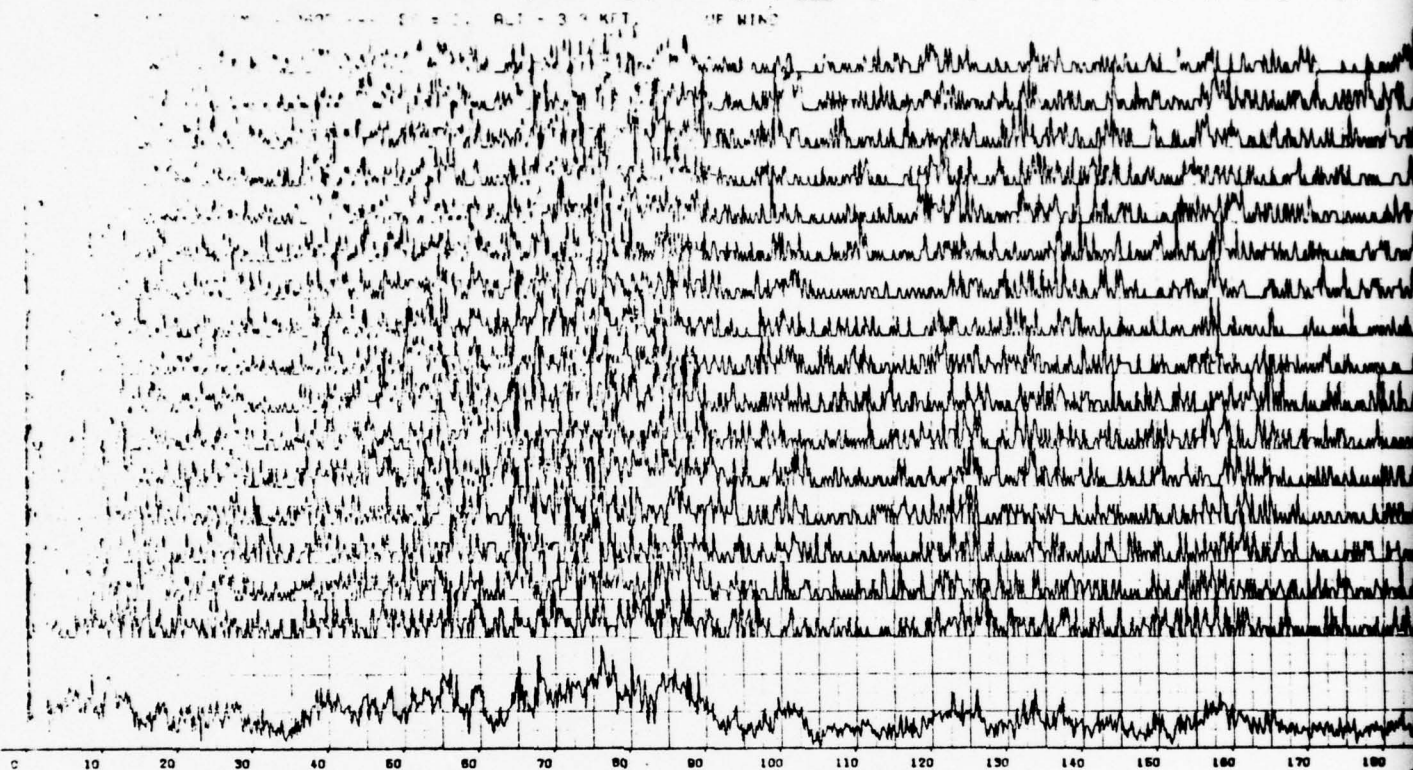
TAGSEA HIT COUNTS vs TIME-0606-SS=5, ALT=2.2KFT CROSS WIND





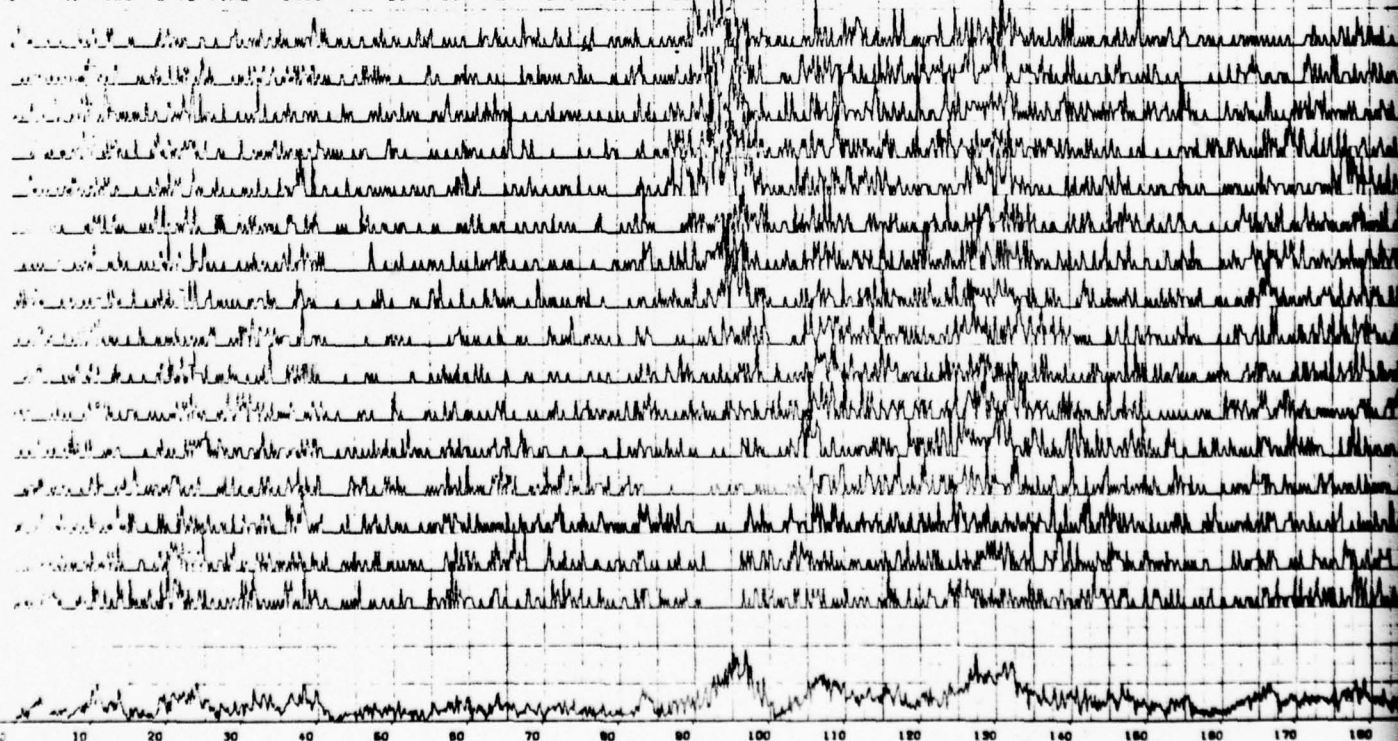
H-45/46

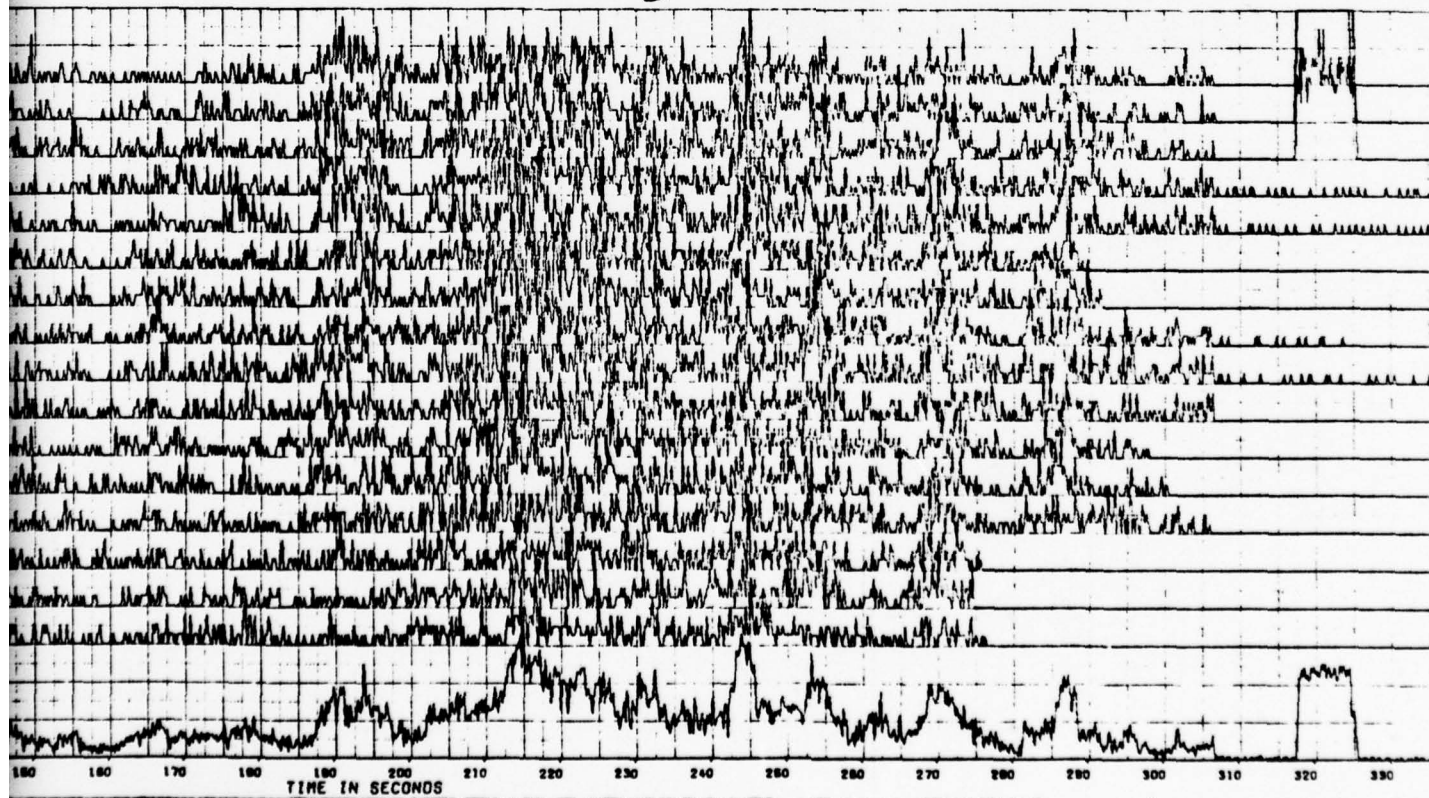
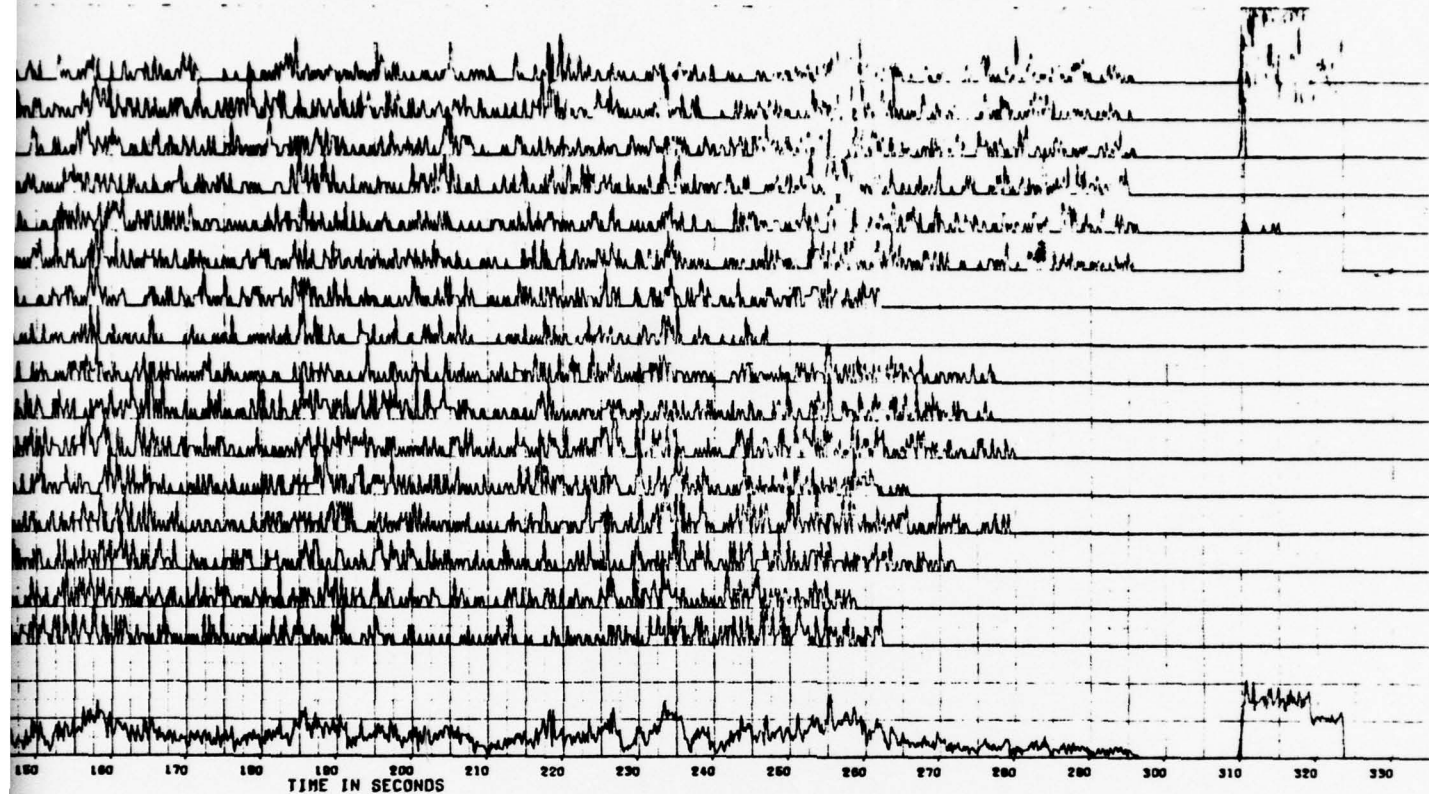
HIT COUNTS vs TIME-0607-SS=5,ALT=3.3KFT UP WIND



TAGSEA HIT COUNTS vs TIME-0608-SS=5,ALT=3.3KFT DOWN WIND

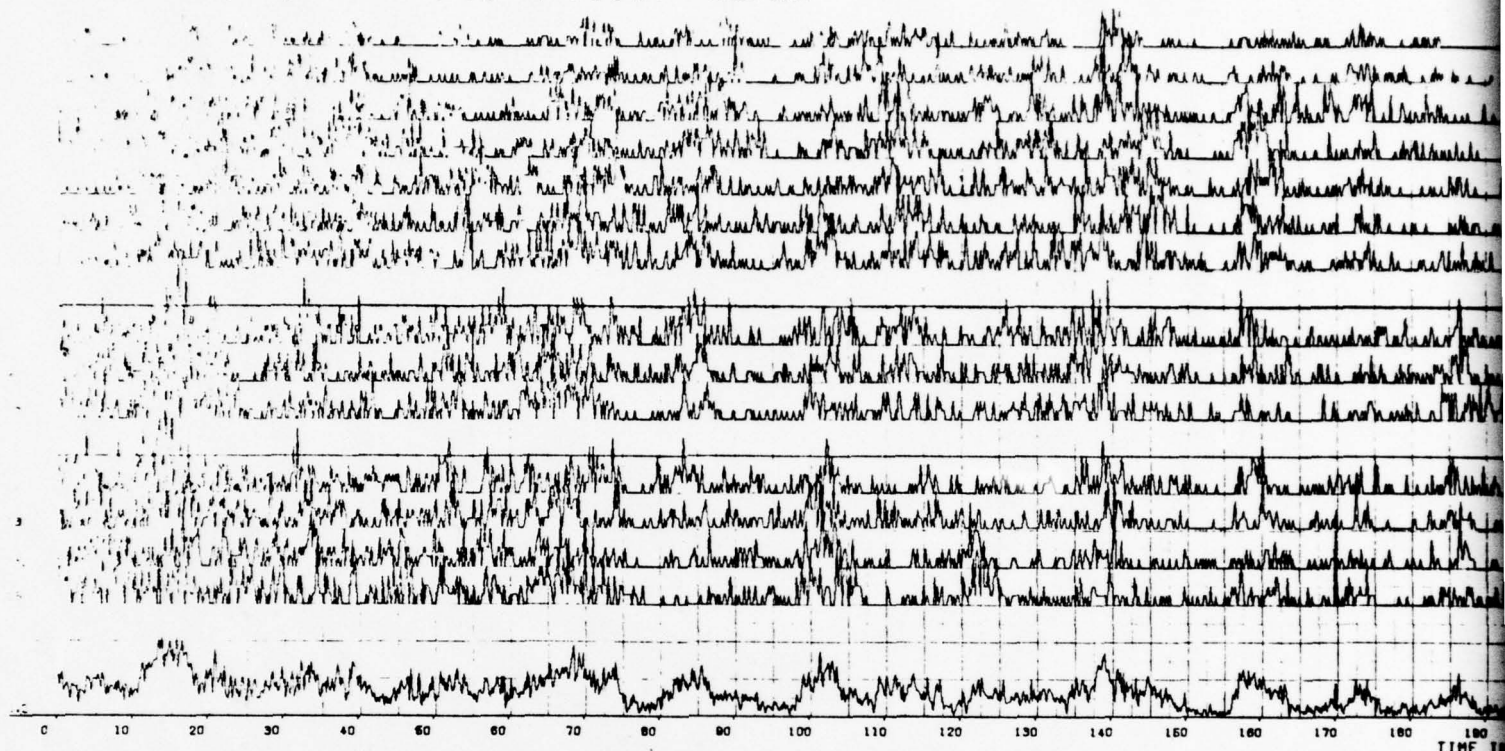
HIT COUNTS VS TIME - 0608 -- SS = 5. ALT = 3.3 KFT. DOWN WIND



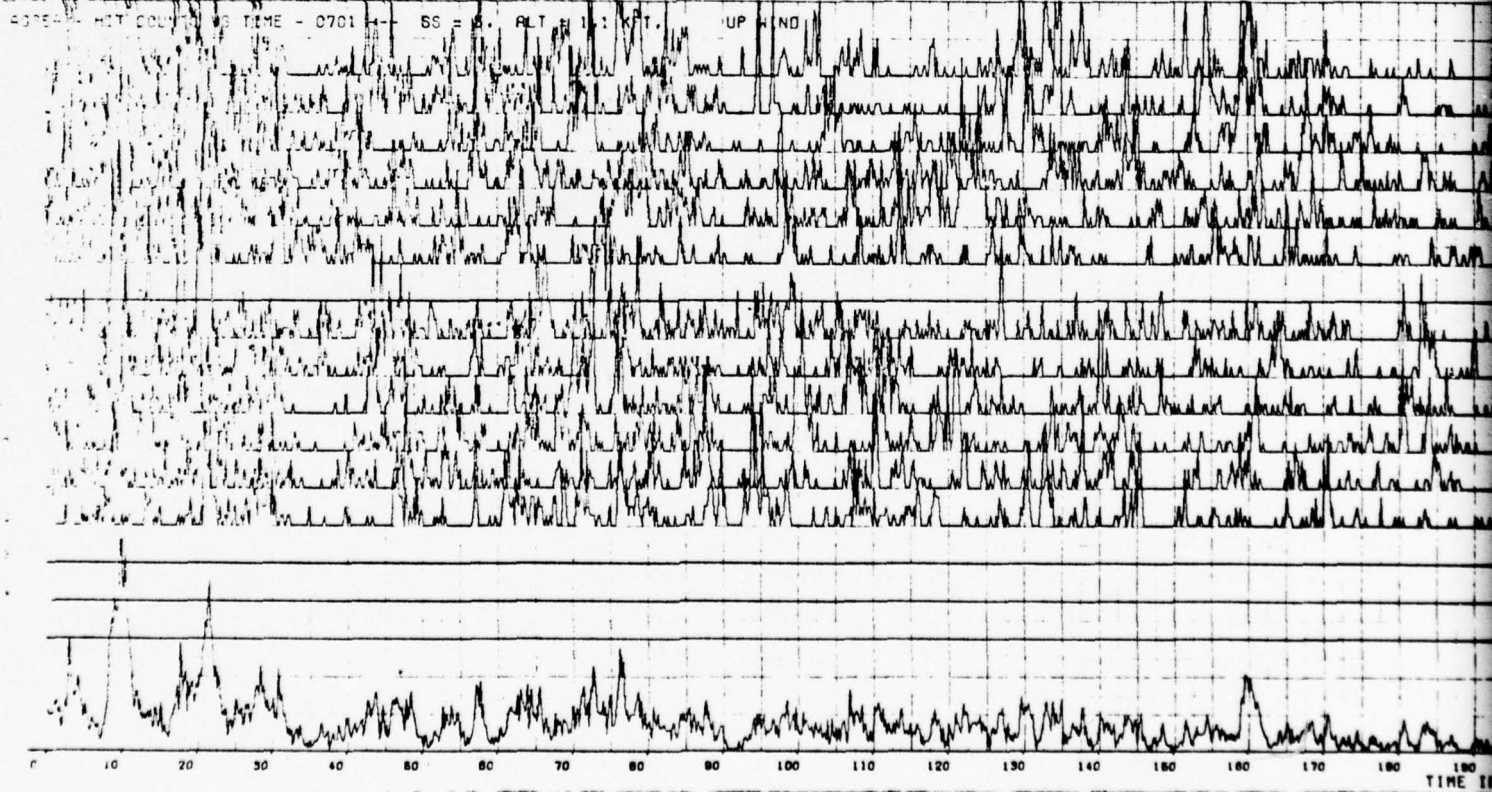


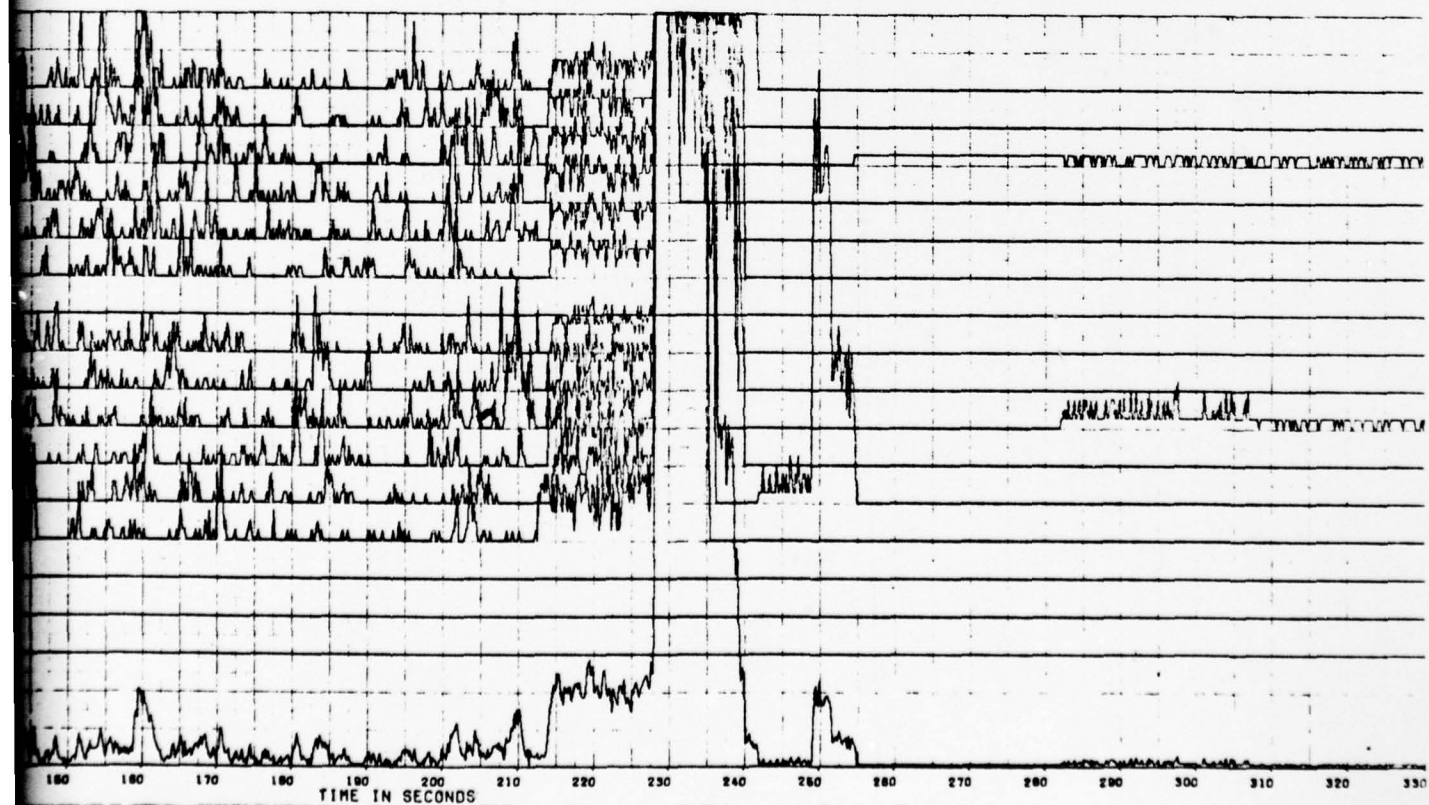
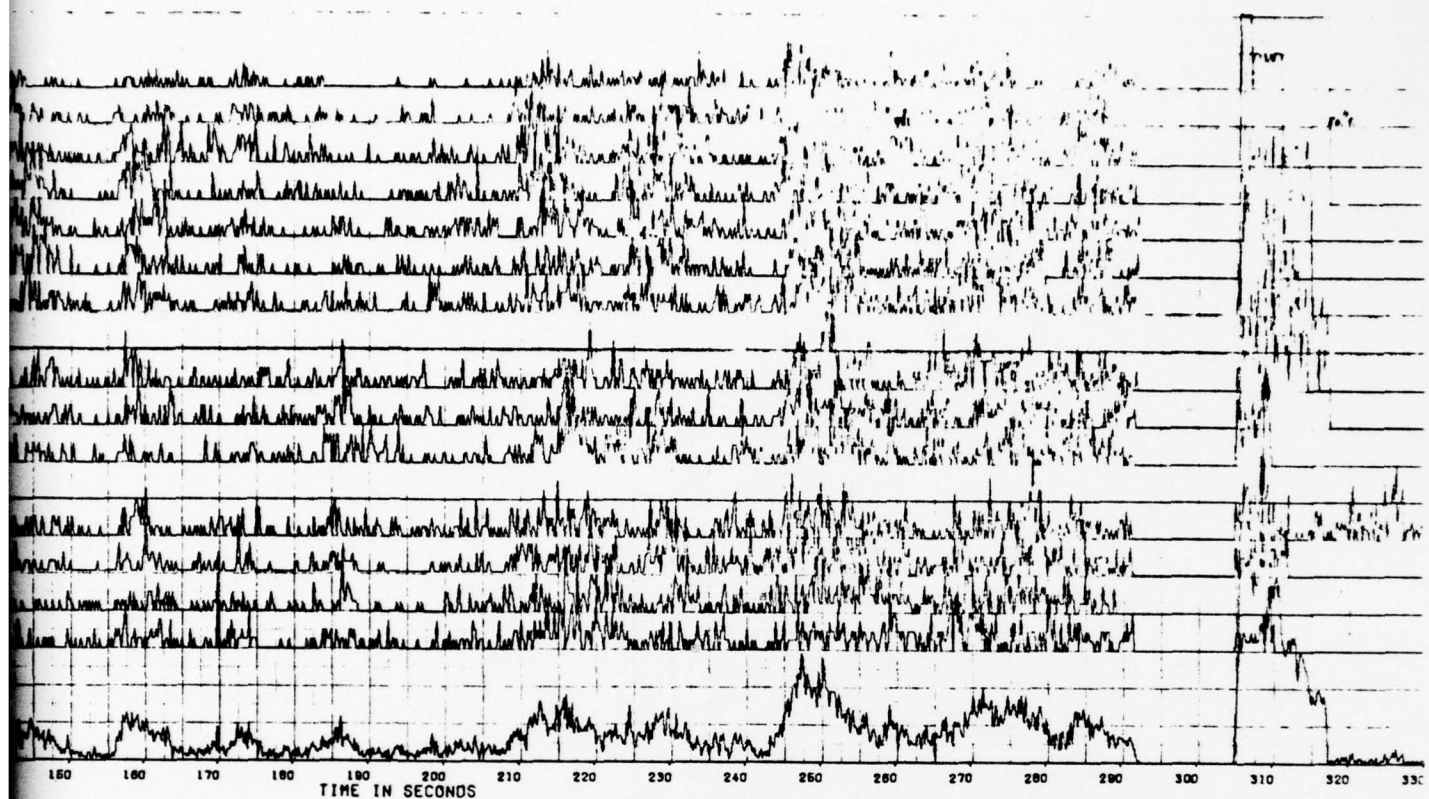
H-47/48

TAGSEA HIT COUNTS vs TIME-0609-SS=5,ALT=3.3KFT CROSS WIND



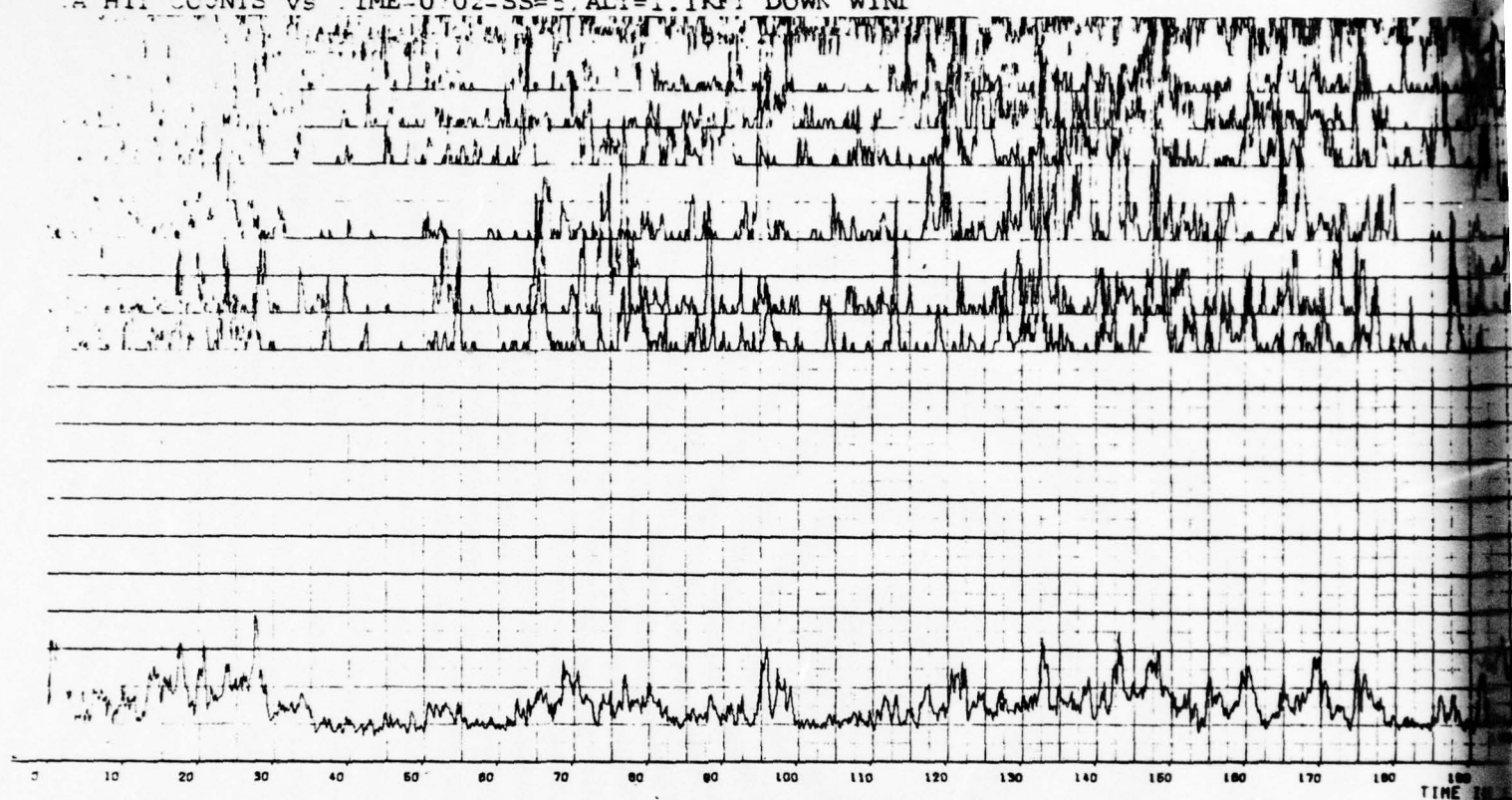
TAGSEA HIT COUNTS vs TIME-0701-SS=5,ALT=1.1KFT UP WIND





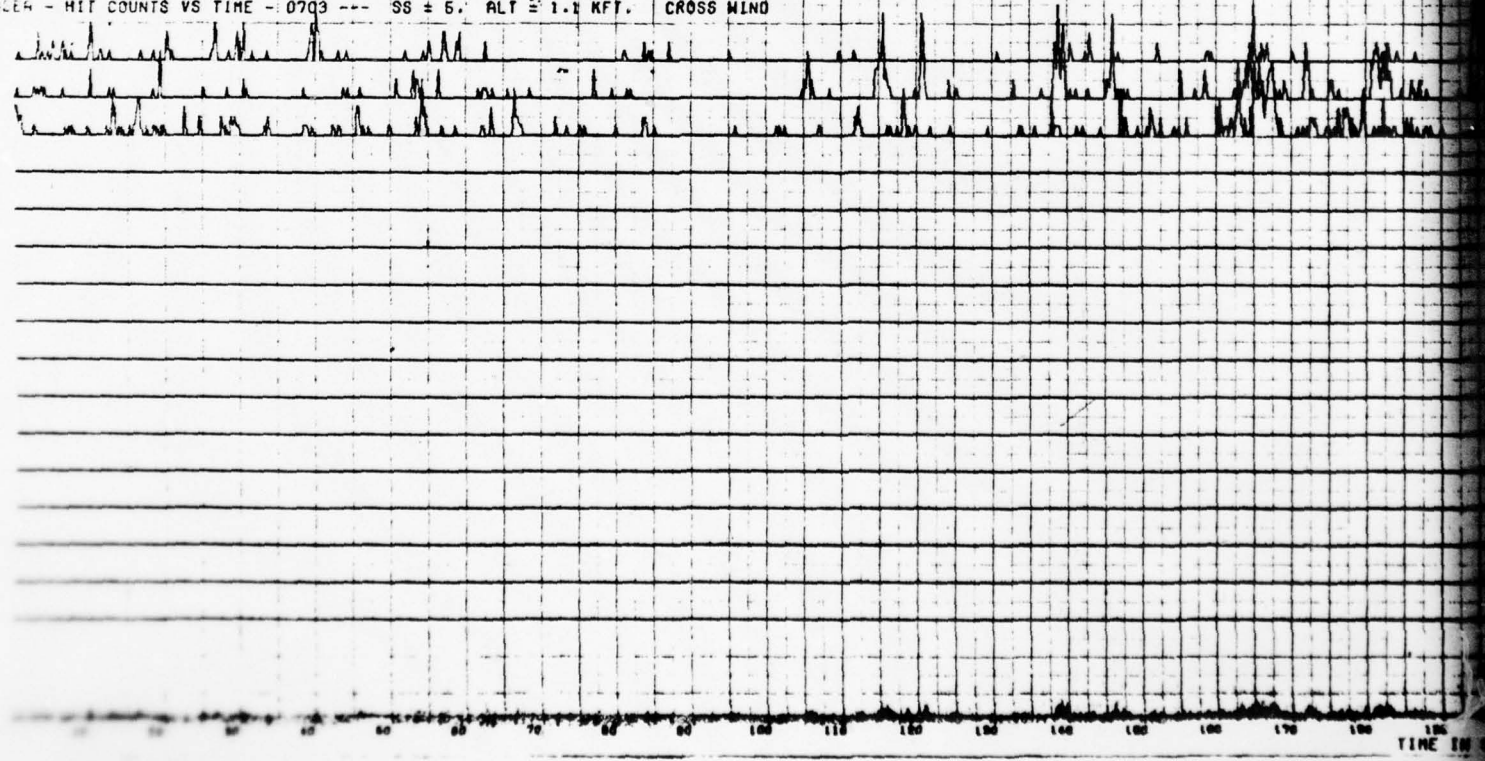
H-49/50

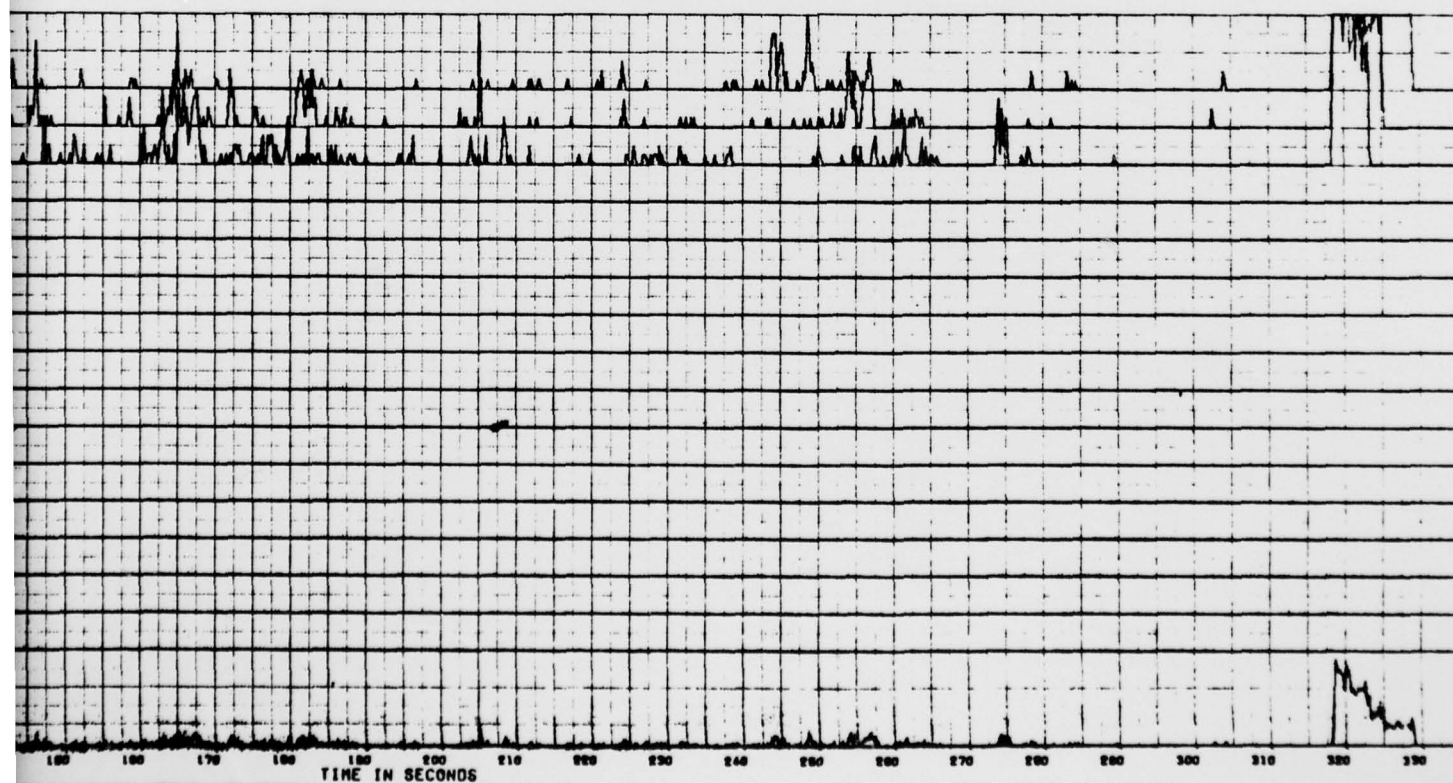
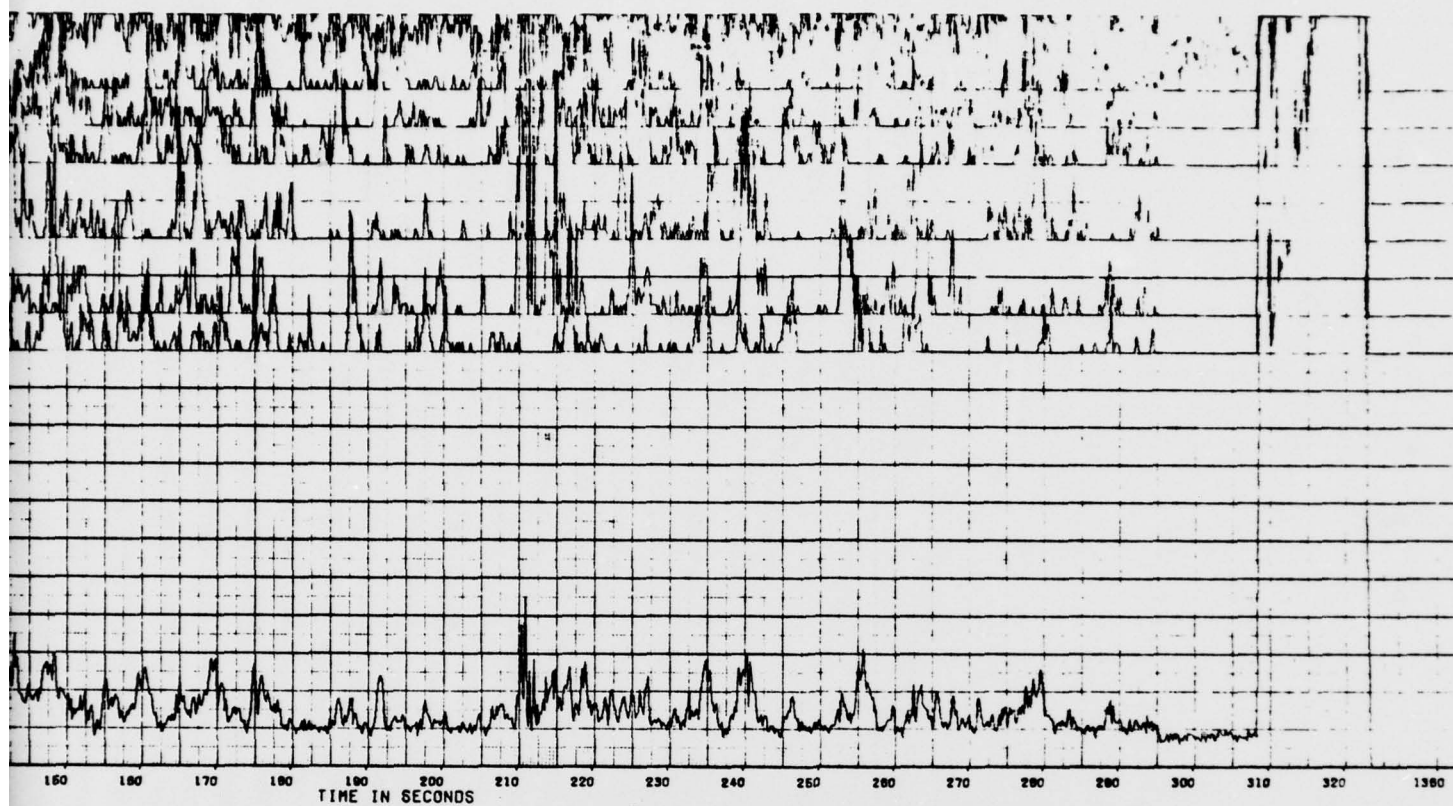
LA HIT COUNTS vs TIME-0702-SS=5,ALT=1.1KFT DOWN WIND



TAGSEA HIT COUNTS vs TIME-0703-SS=5,ALT=1.1KFT CROSS WIND

0703 - HIT COUNTS VS TIME - 0703 --- SS = 5. ALT = 1.1 KFT. CROSS WIND

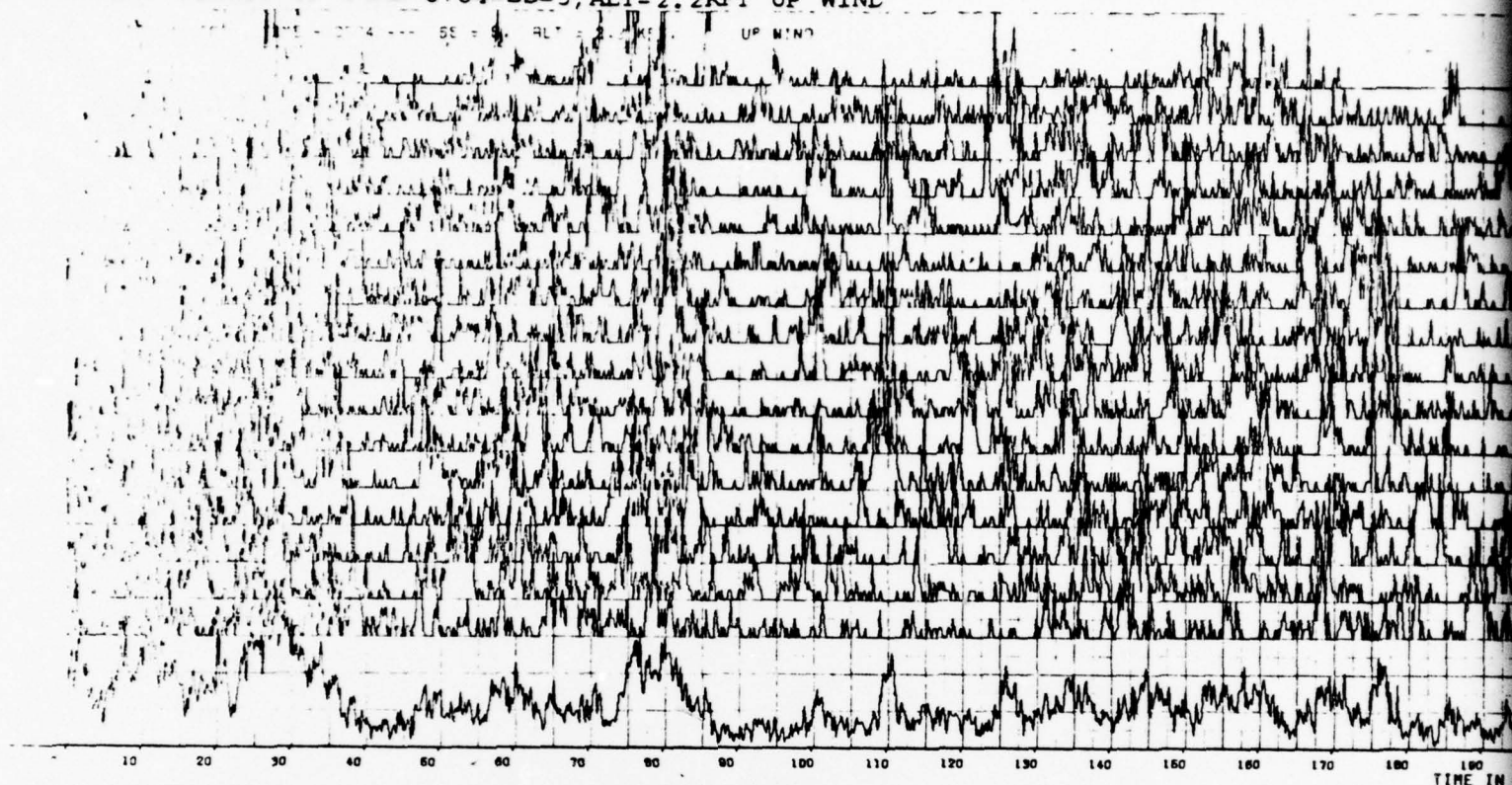




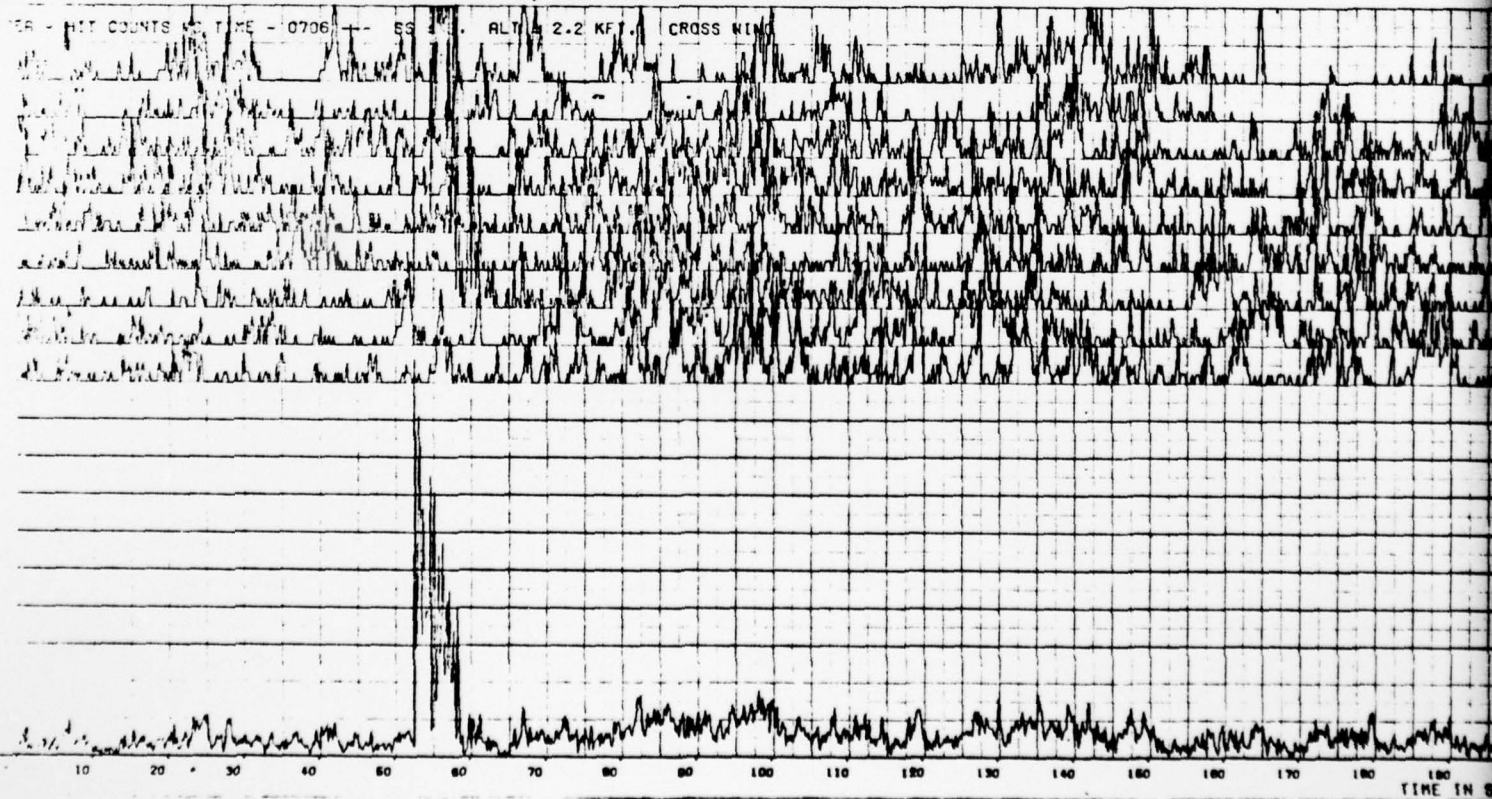
H-51/52

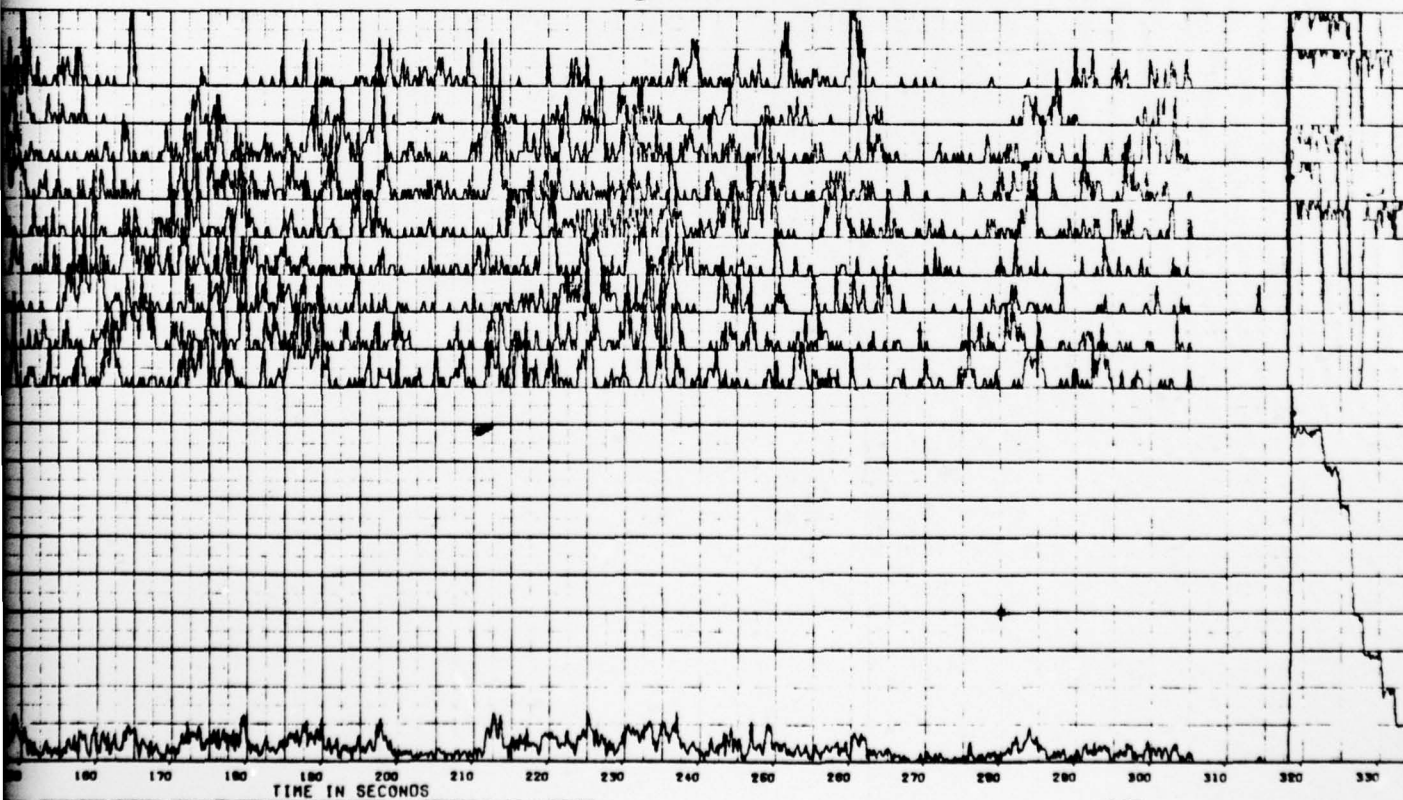
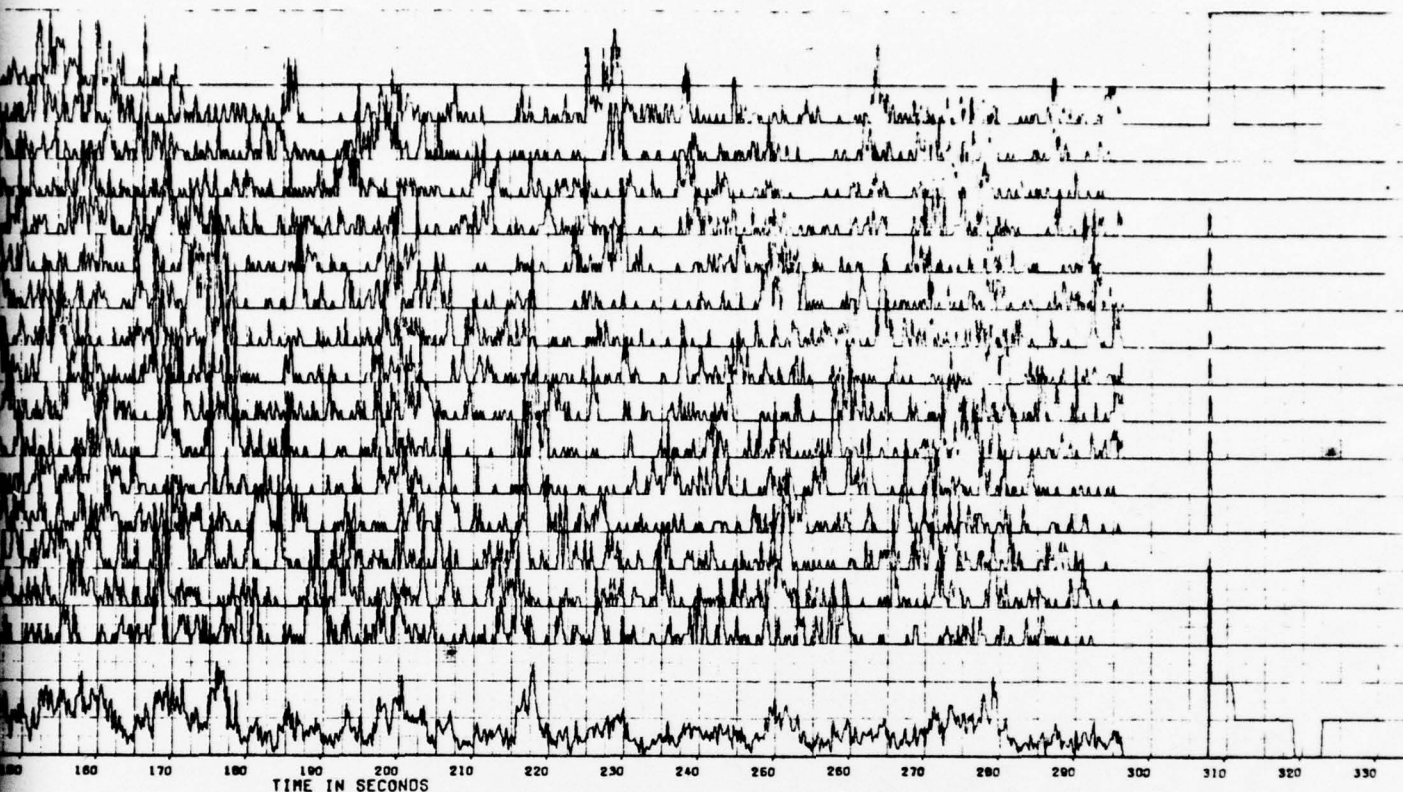
2

SEA HIT COUNTS vs TIME-0704-SS=5,ALT=2.2KFT UP WIND



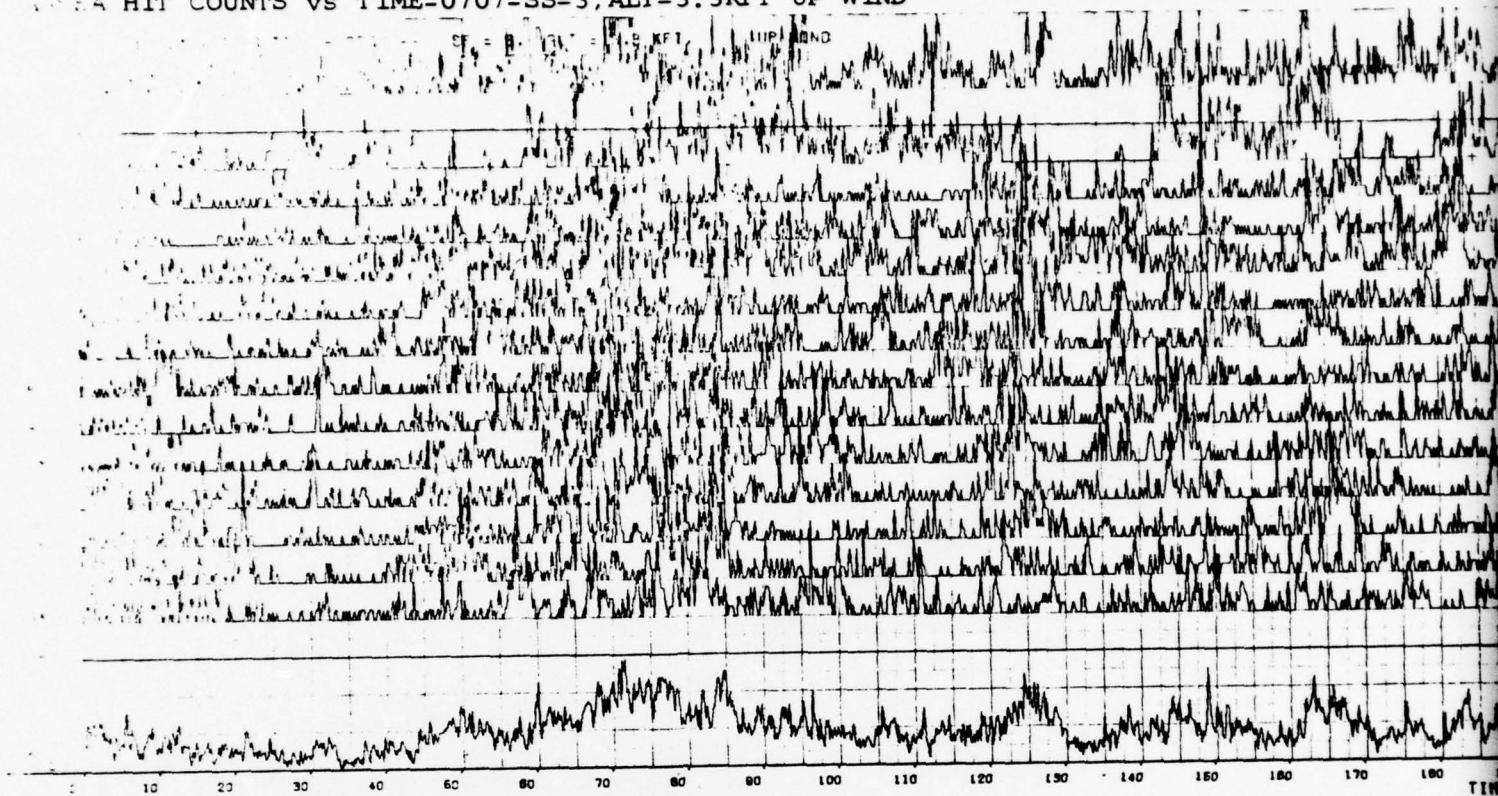
TAGSEA HIT COUNTS vs TIME-0706-SS=5,ALT=2.2KFT CROSS WIND



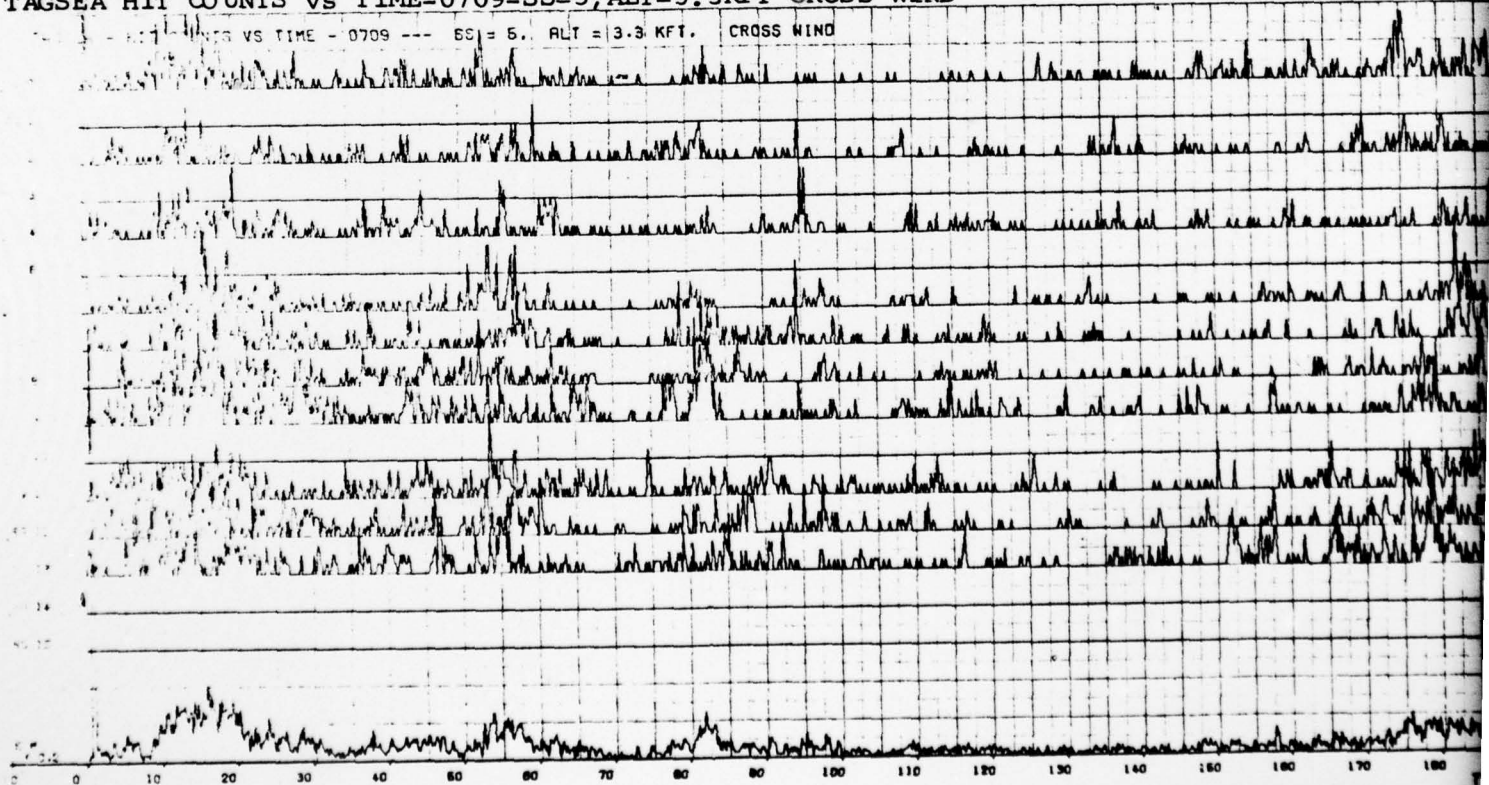


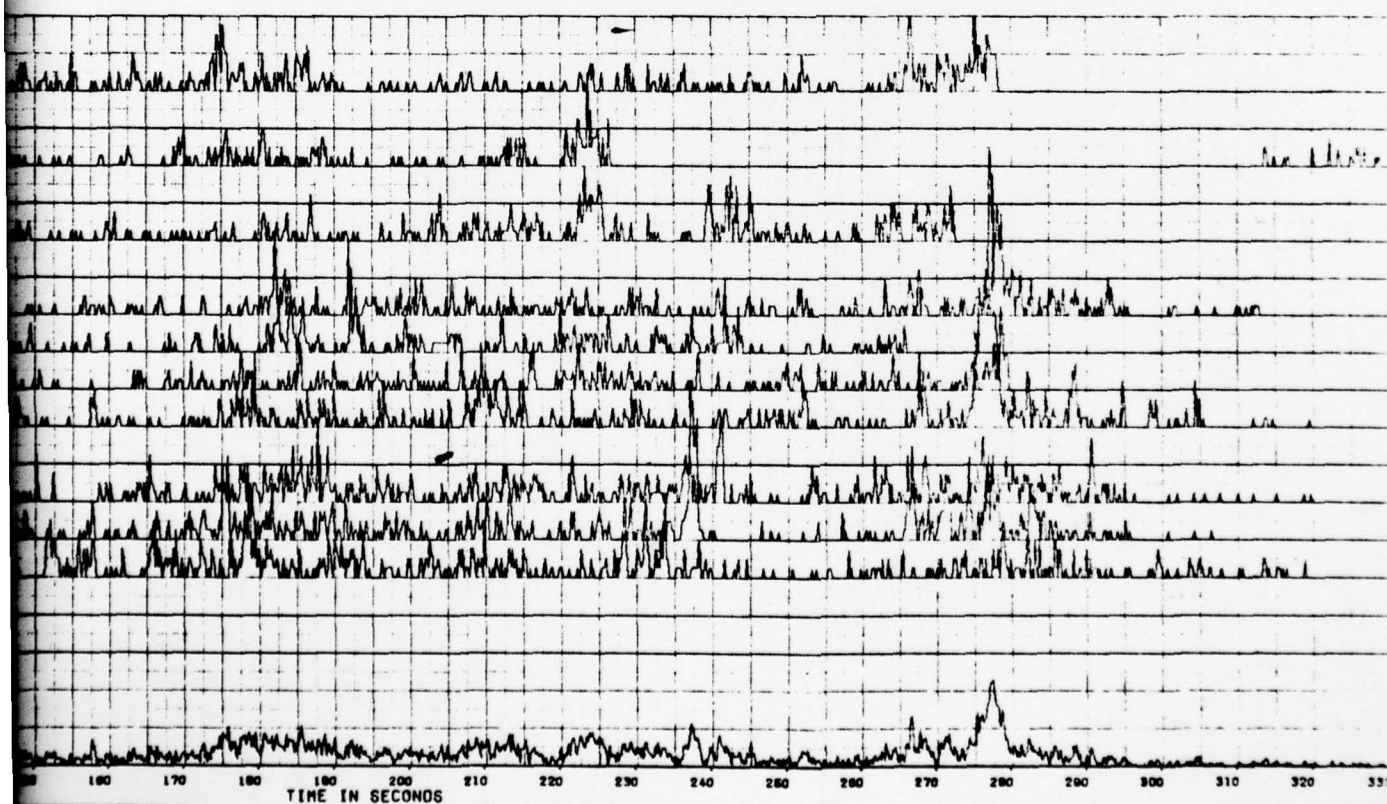
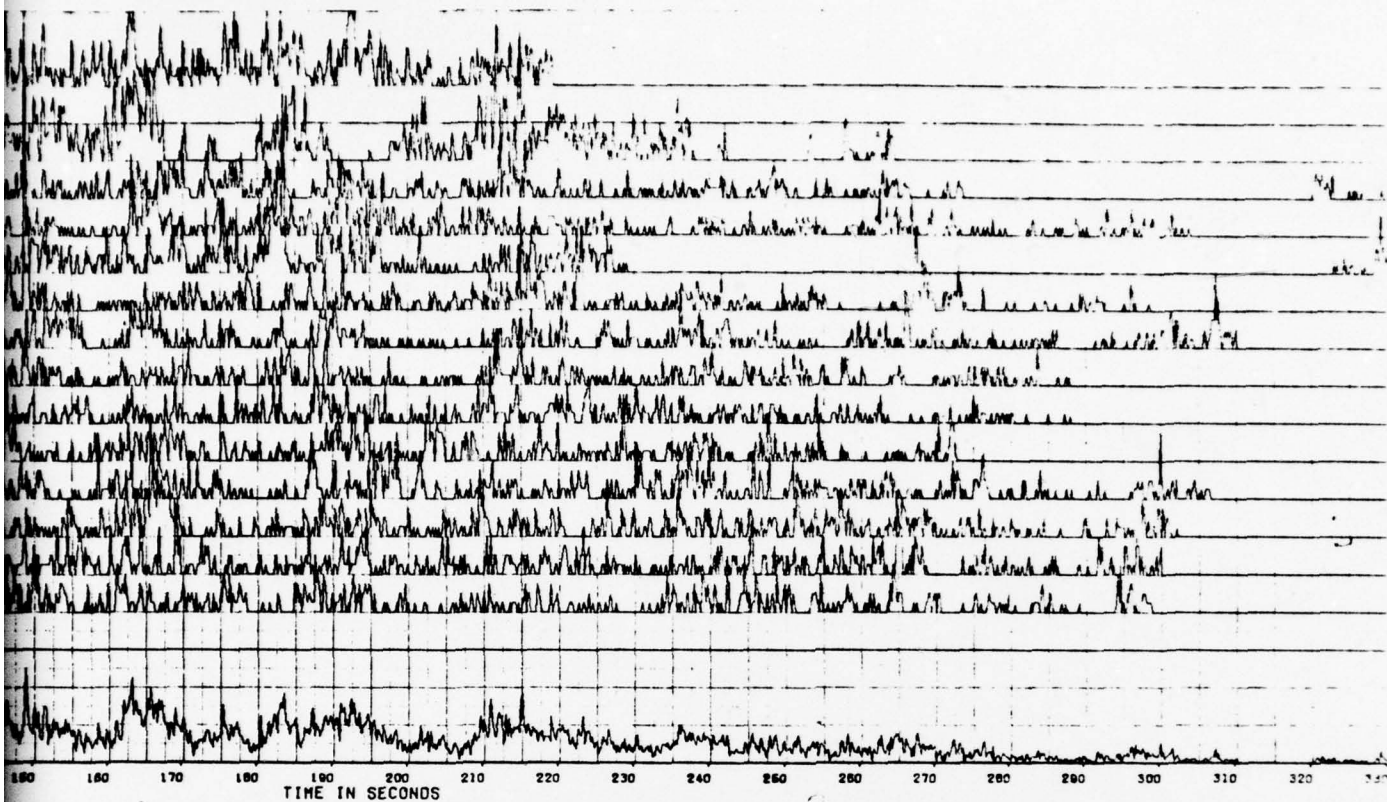
H-53/54

WSEA HIT COUNTS vs TIME-0707-SS=3,ALT=3.3KFT UP WIND



TAGSEA HIT COUNTS vs TIME-0709-SS=5,ALT=3.3KFT CROSS WIND

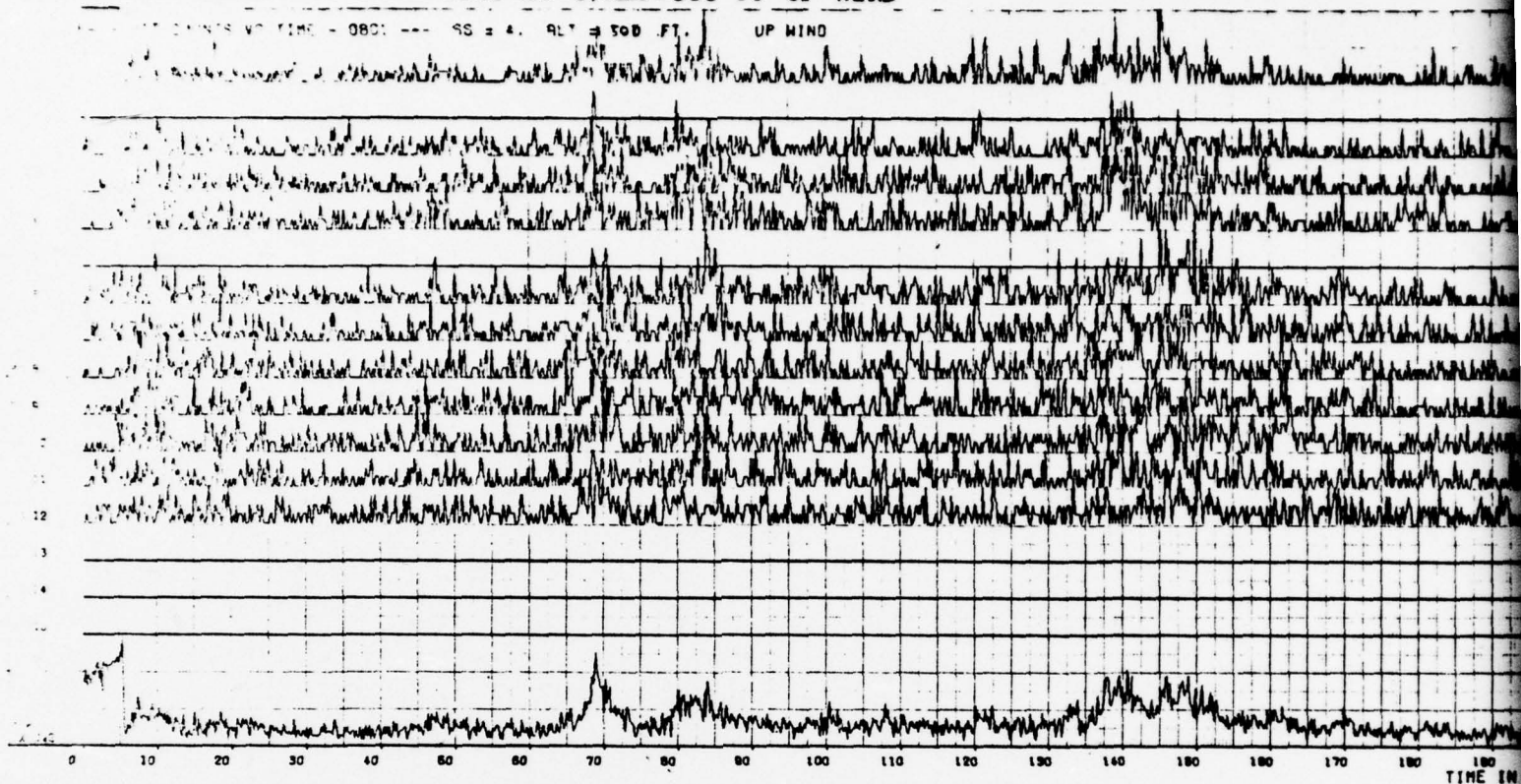




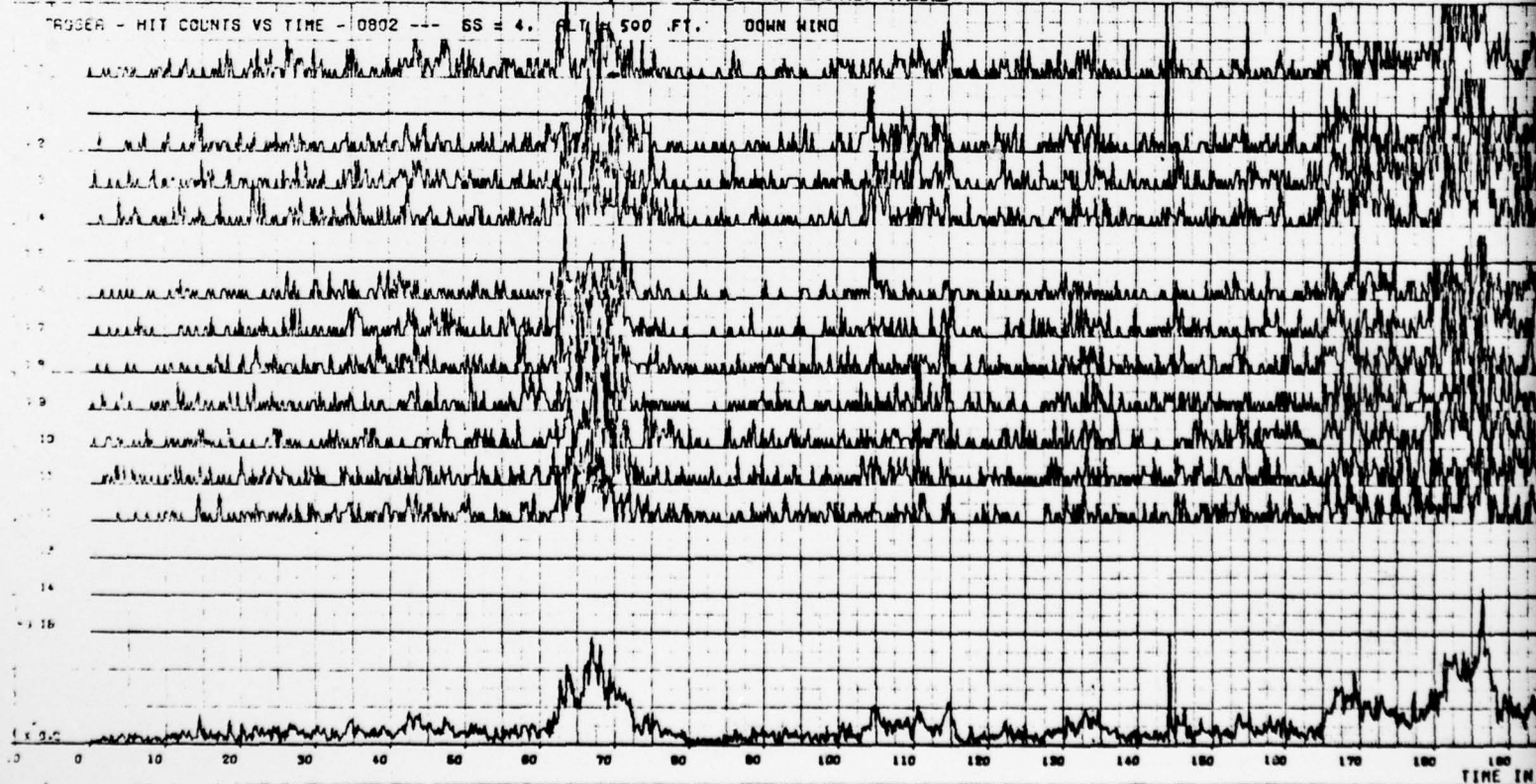
H-55/56

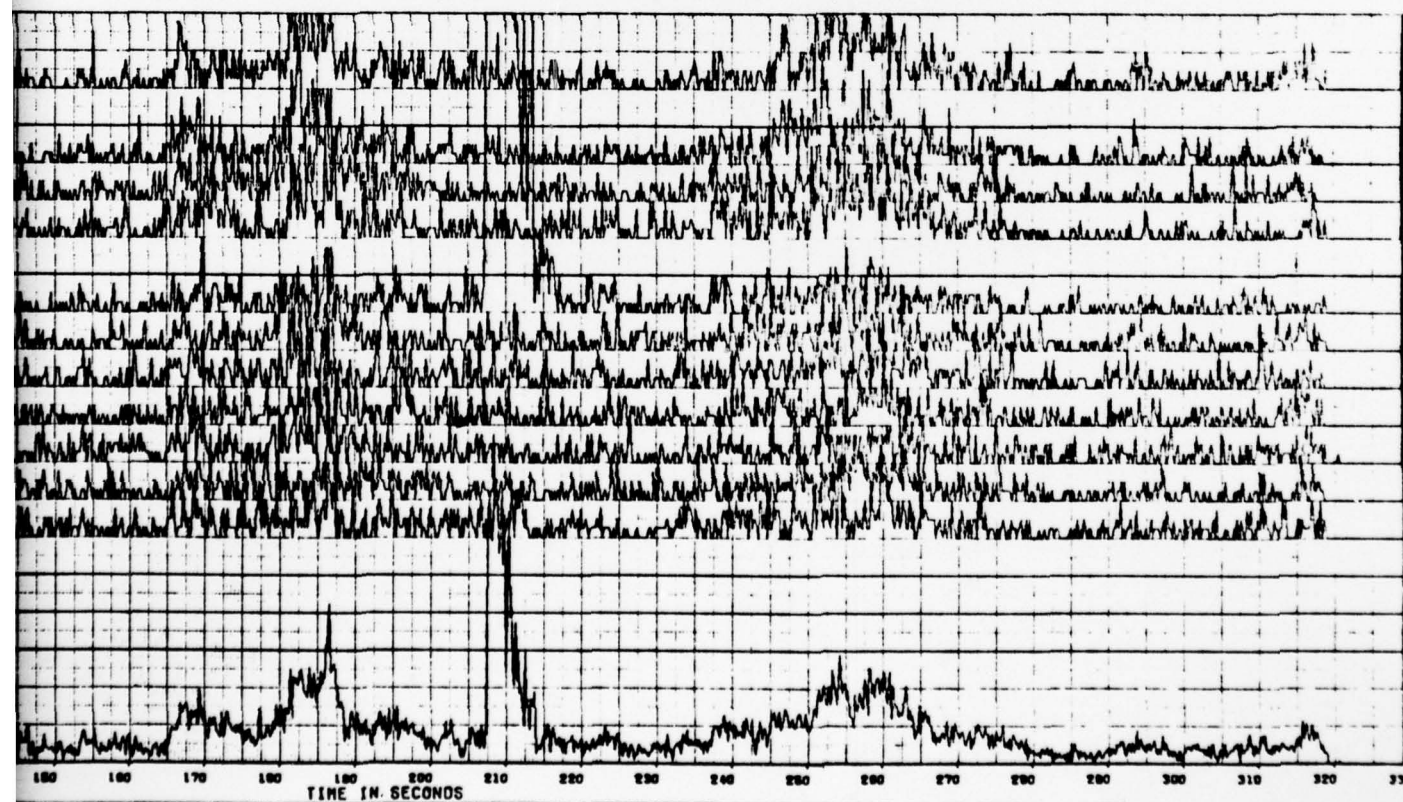
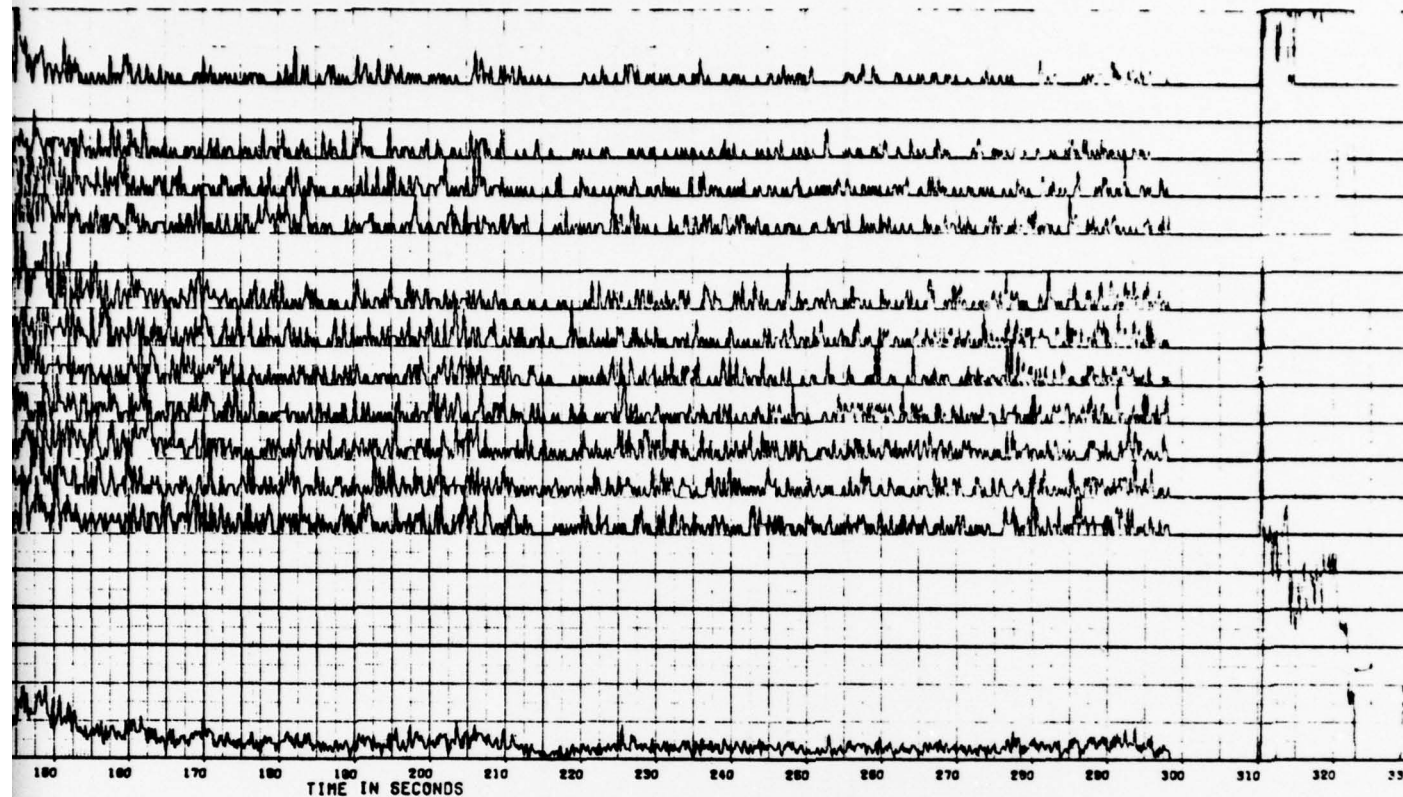
2

AGSEA HIT COUNTS vs TIME-0801-SS=4,ALT=500 FT UP WIND



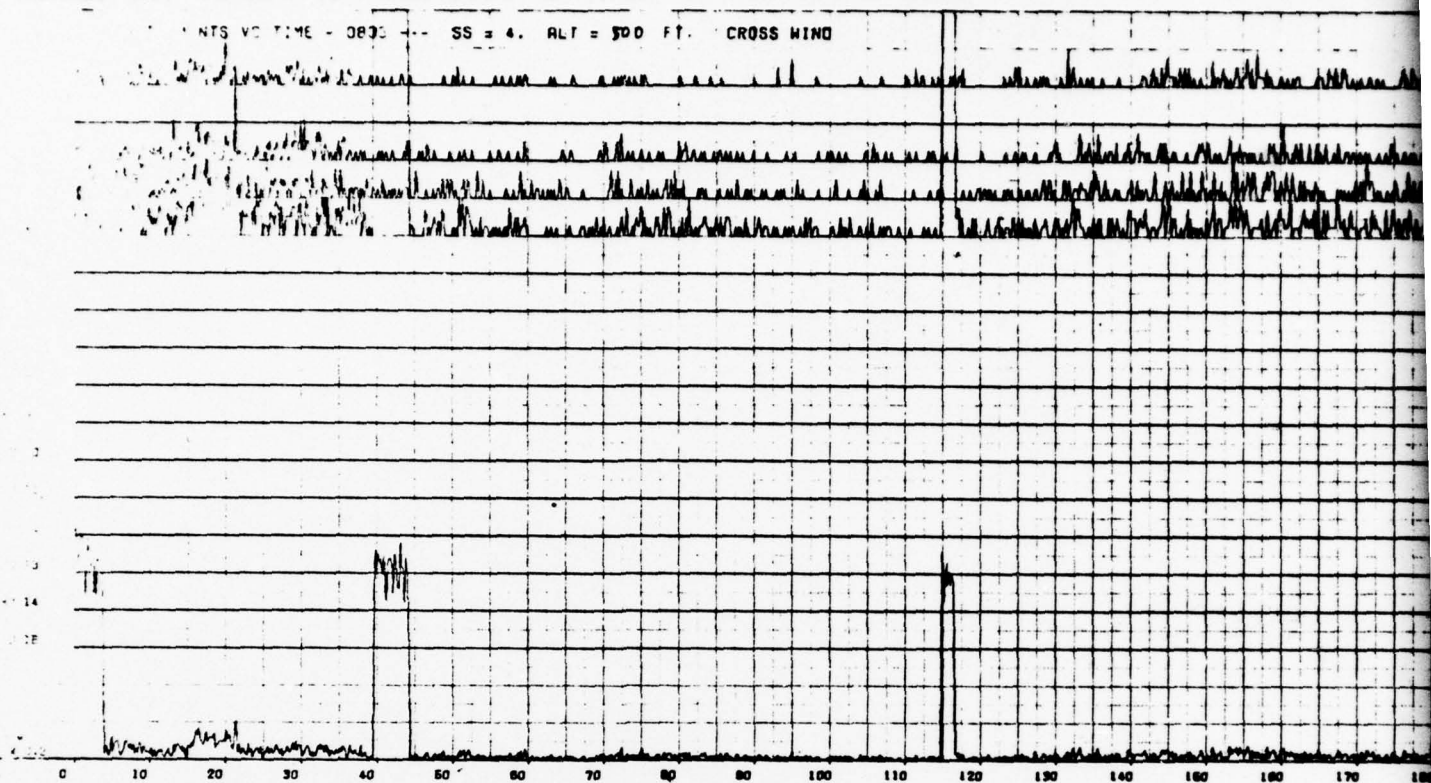
TAGSEA HIT COUNTS vs TIME-0802-SS=4,ALT=500 FT DOWN WIND



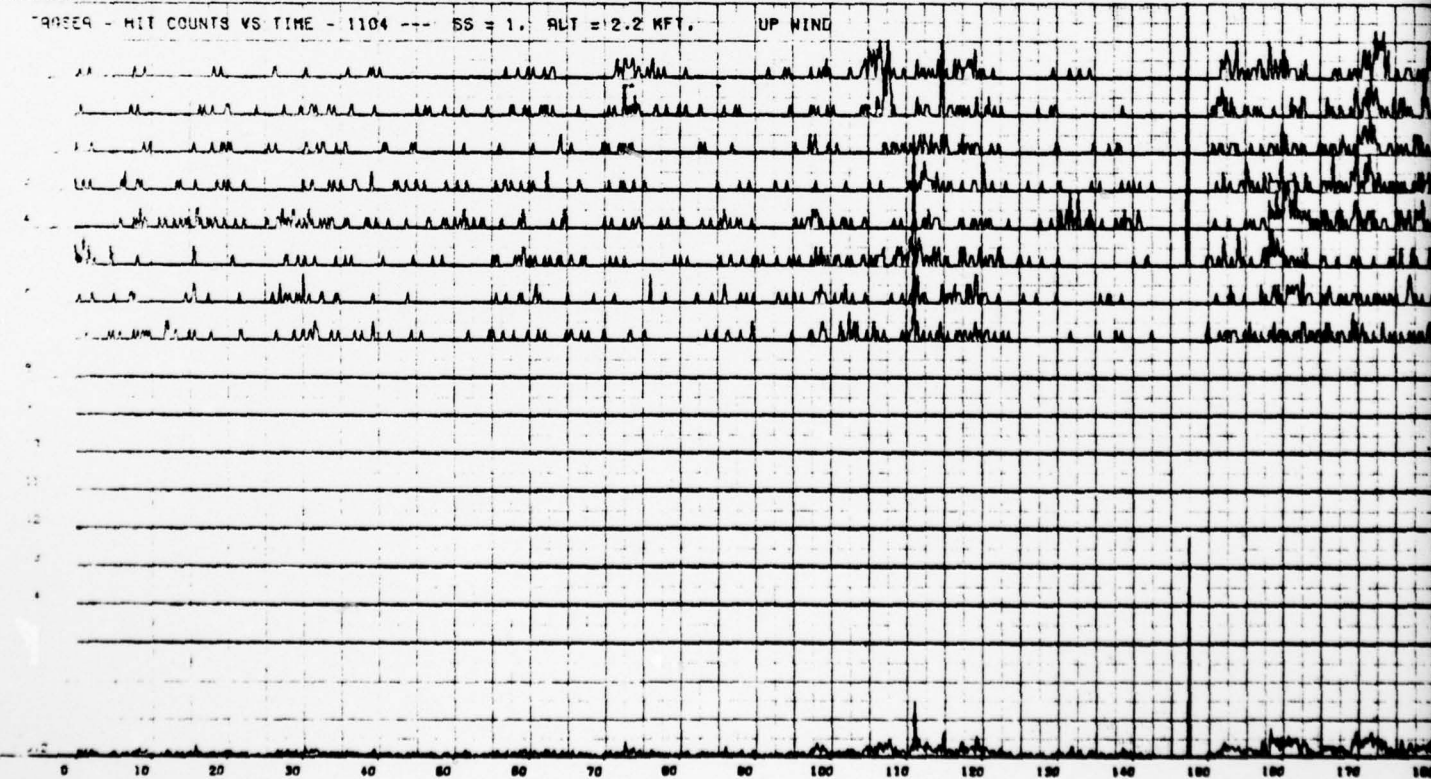


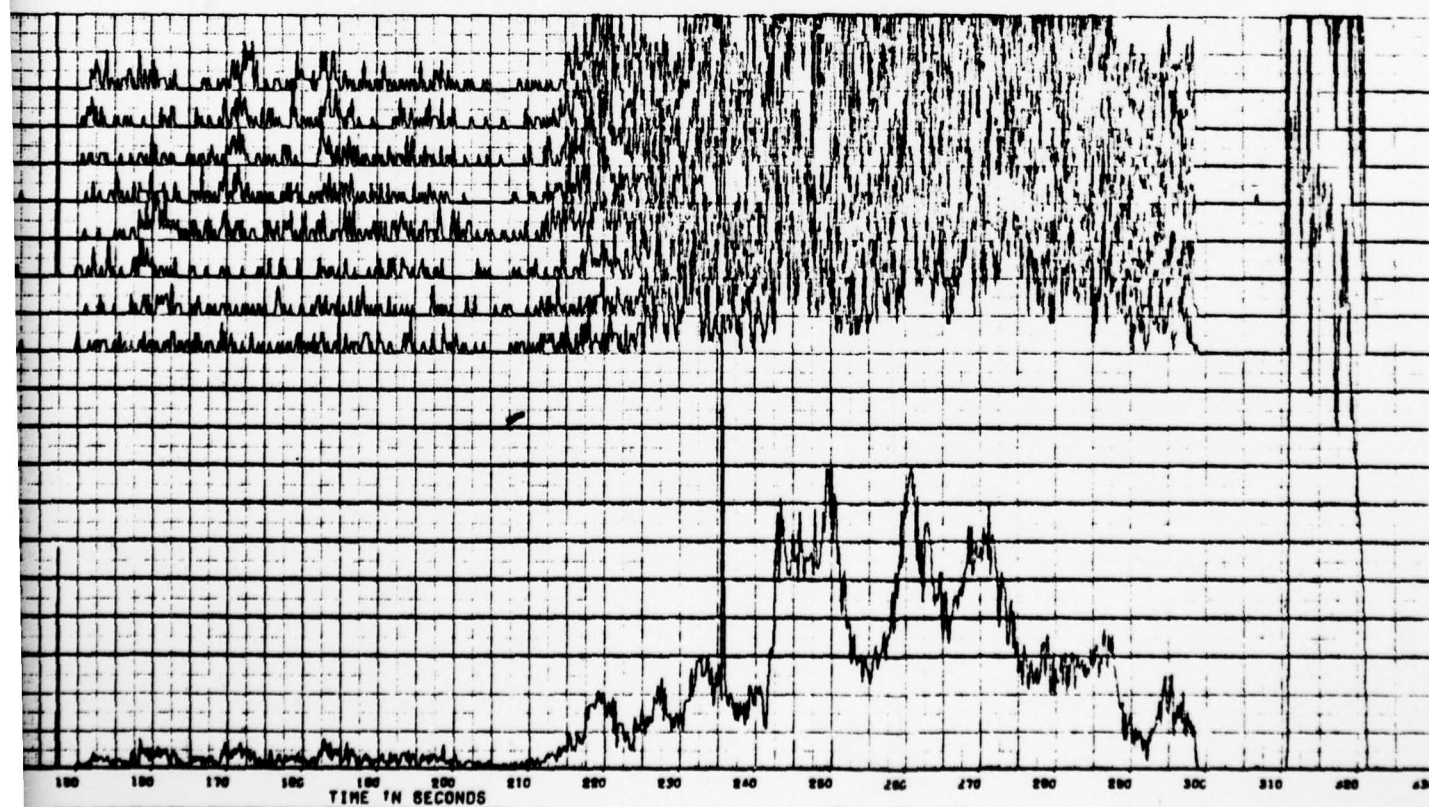
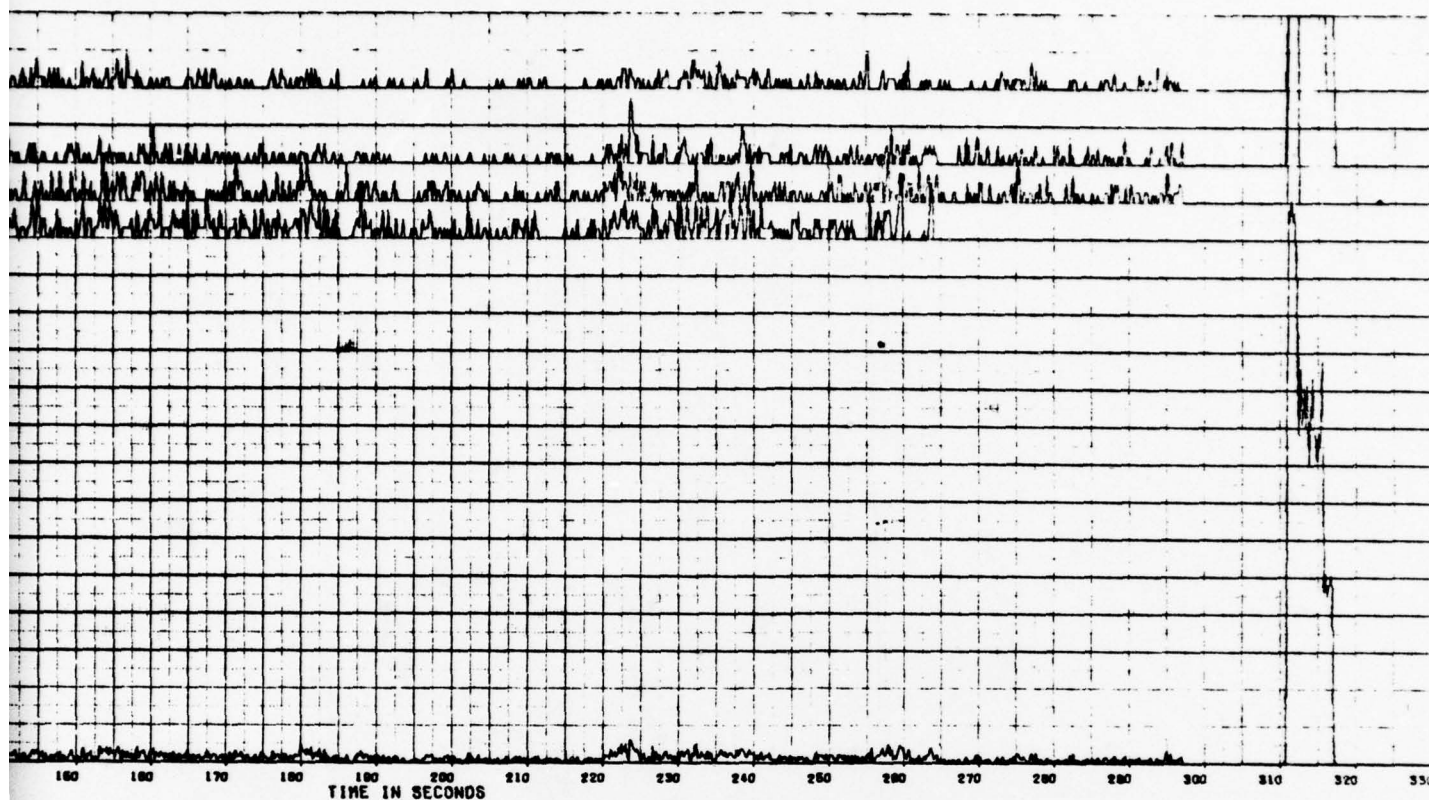
H-57/58

TAGSEA HIT COUNTS vs TIME-0803-SS=4,ALT=500 FT CROSS WIND



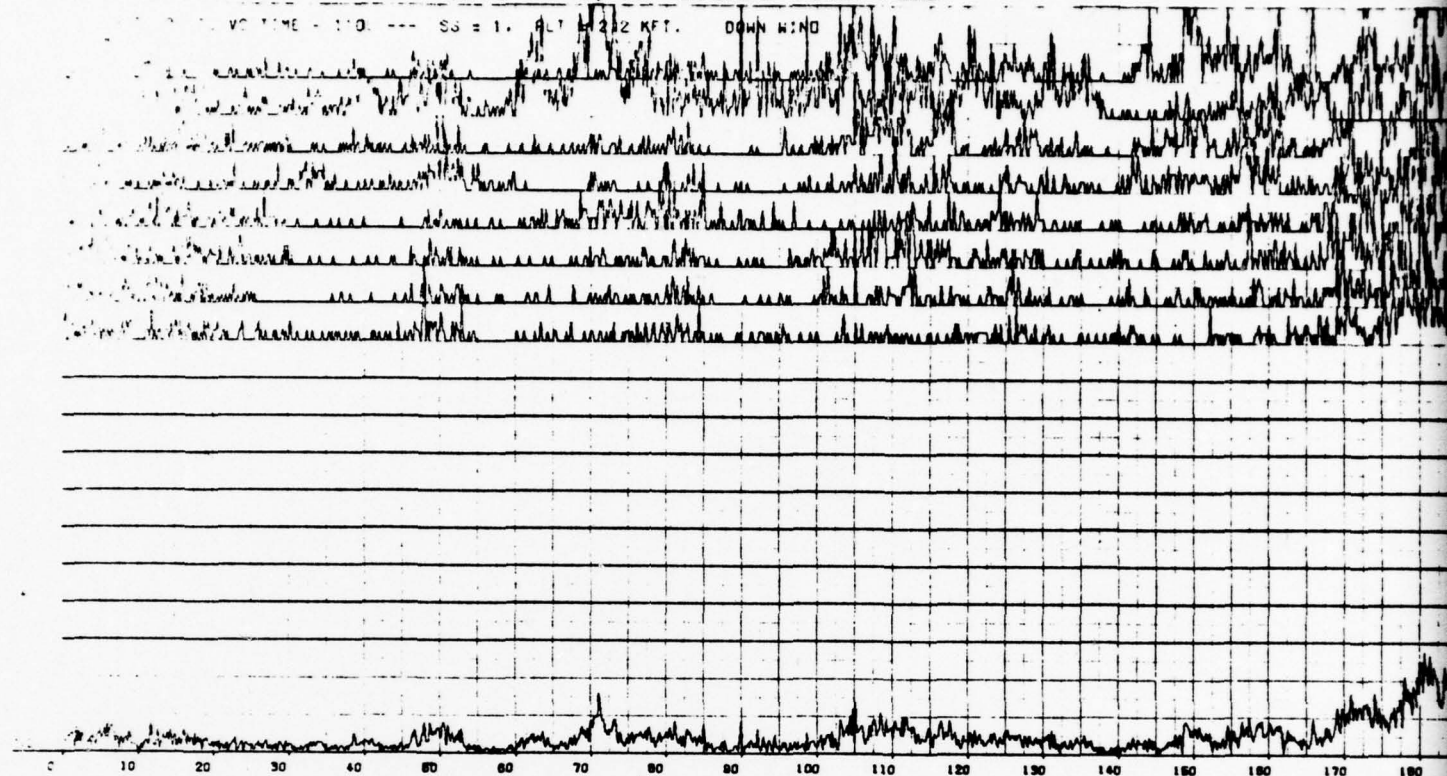
TAGSEA HIT COUNTS vs TIME-1104-SS=1,ALT=2.2KFT UP WIND



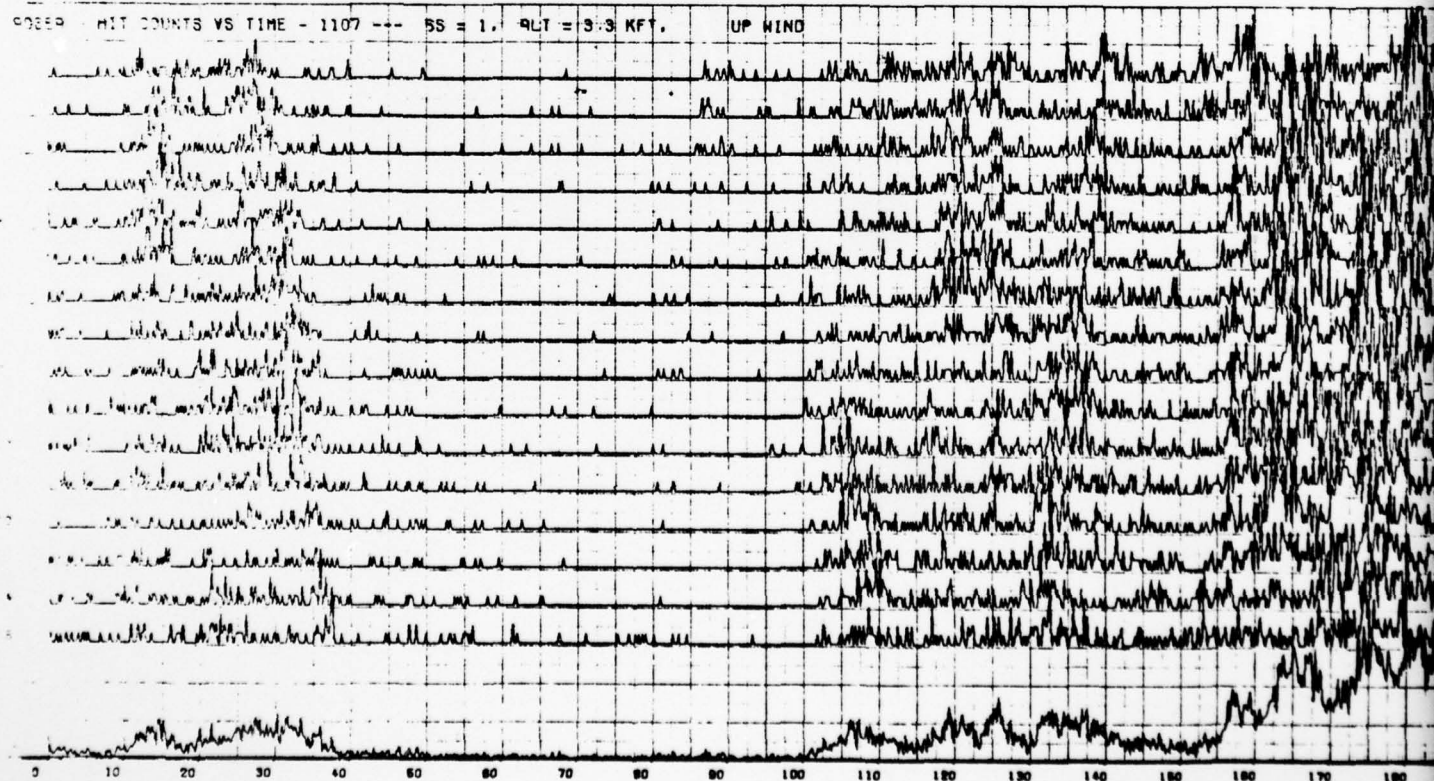


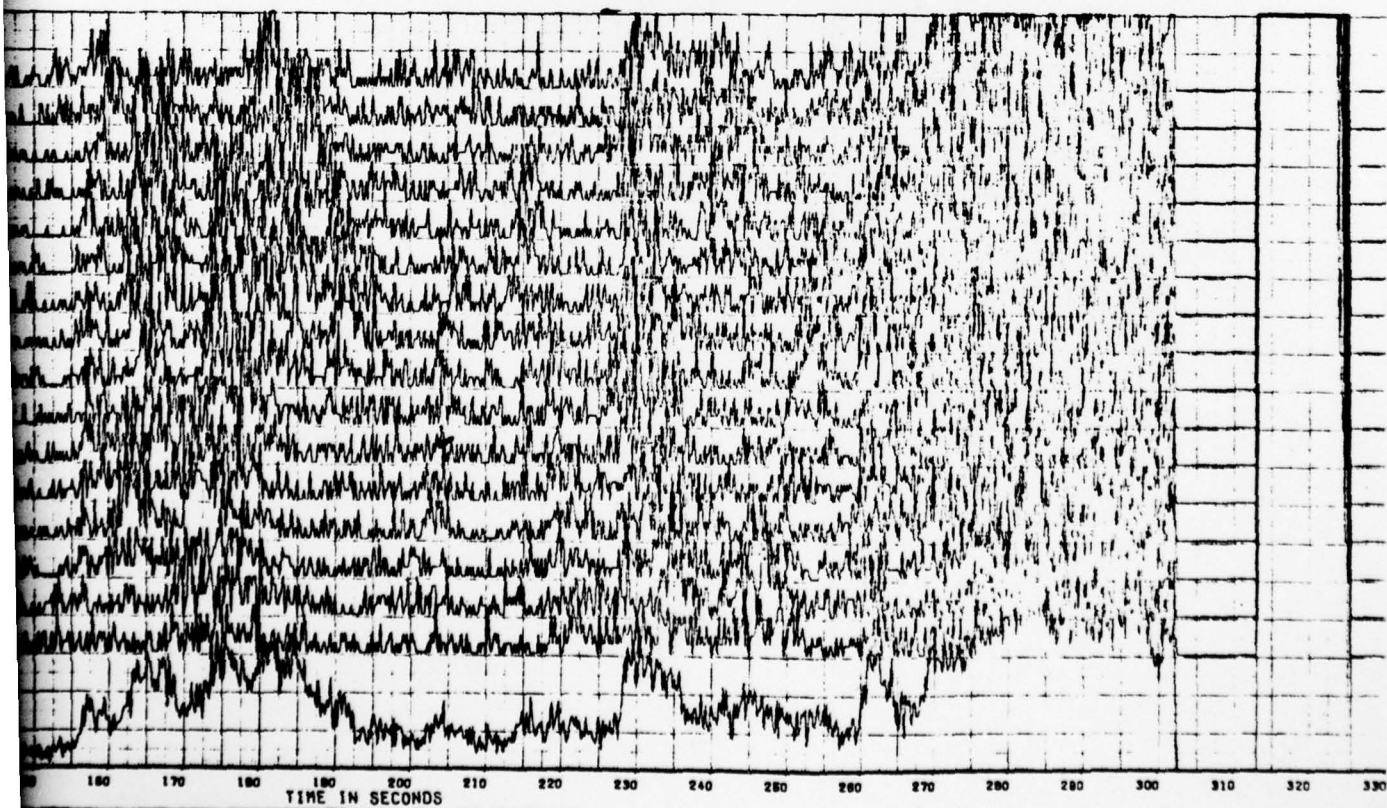
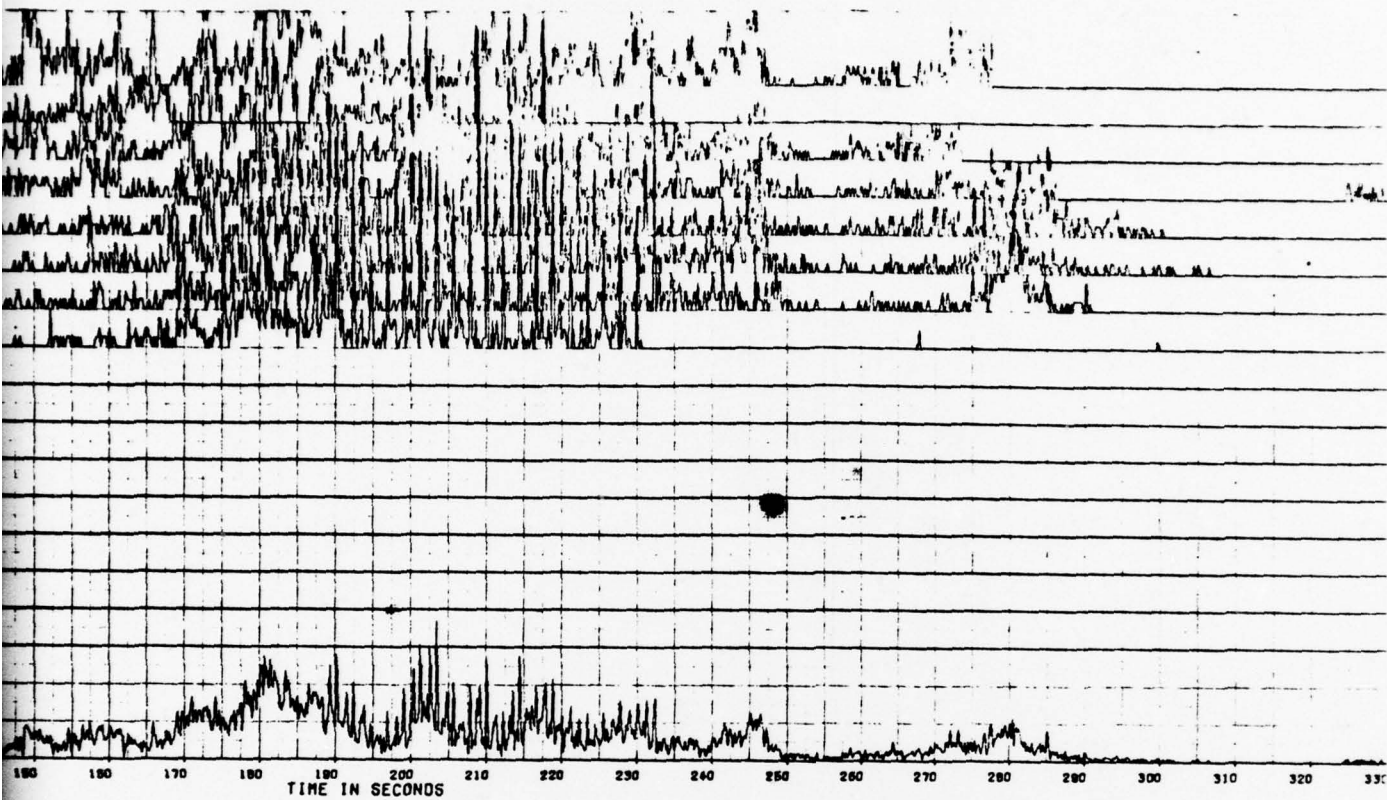
H-59/60

AGSEA HIT COUNTS vs TIME-1105-SS=1,ALT=2.2KFT DOWN WIND



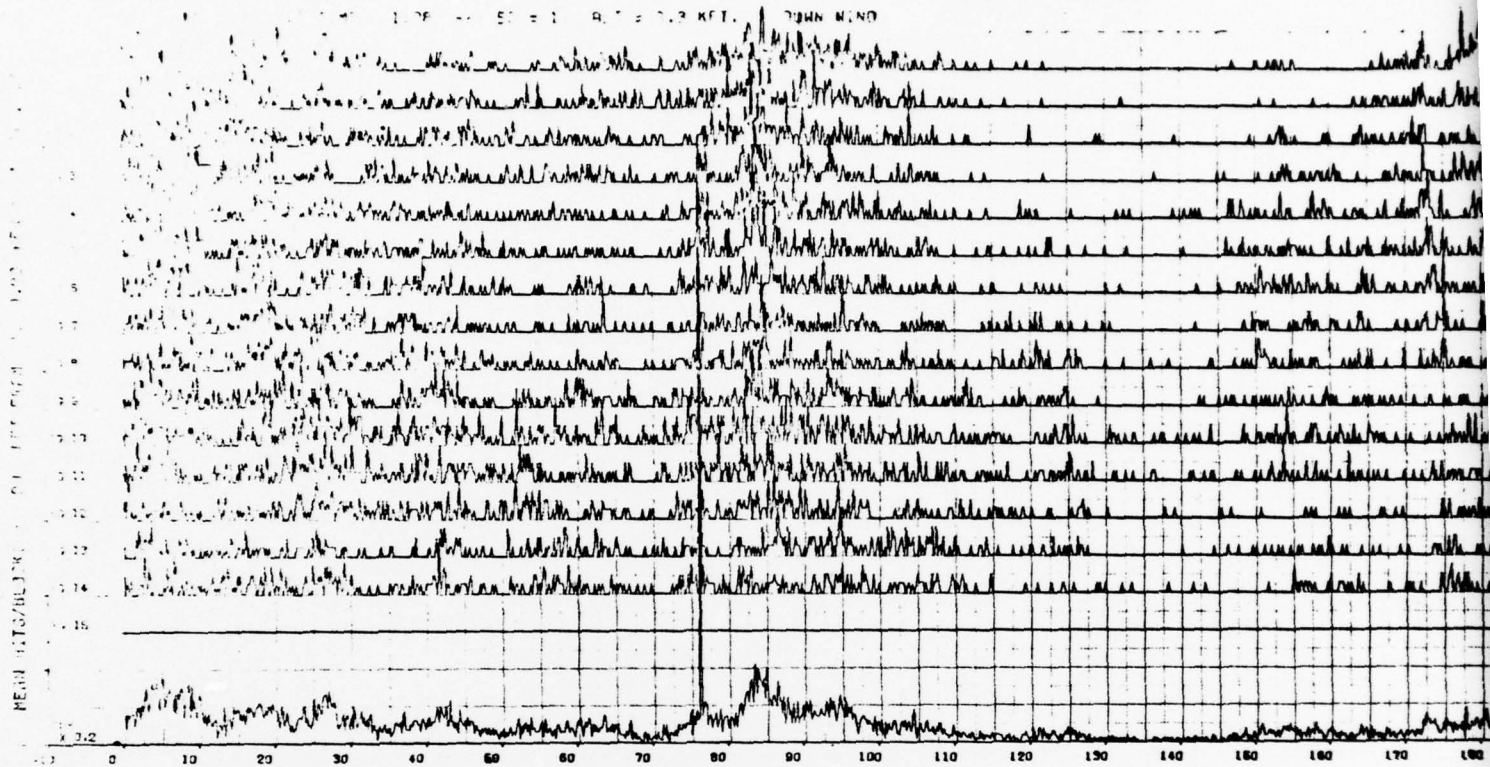
TAGSEA HIT COUNTS vs TIME-1107-SS=1,ALT=3.3KFT UP WIND



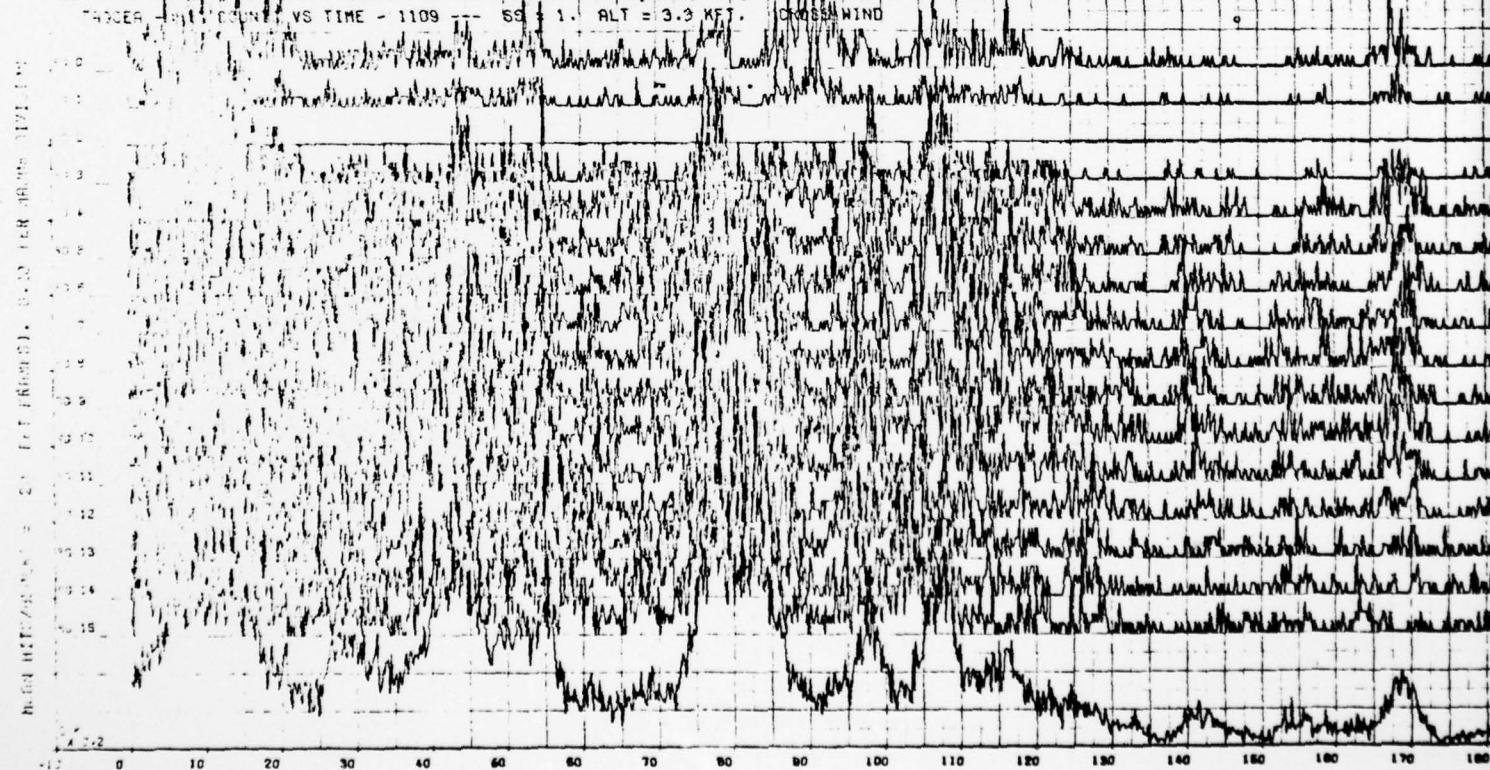


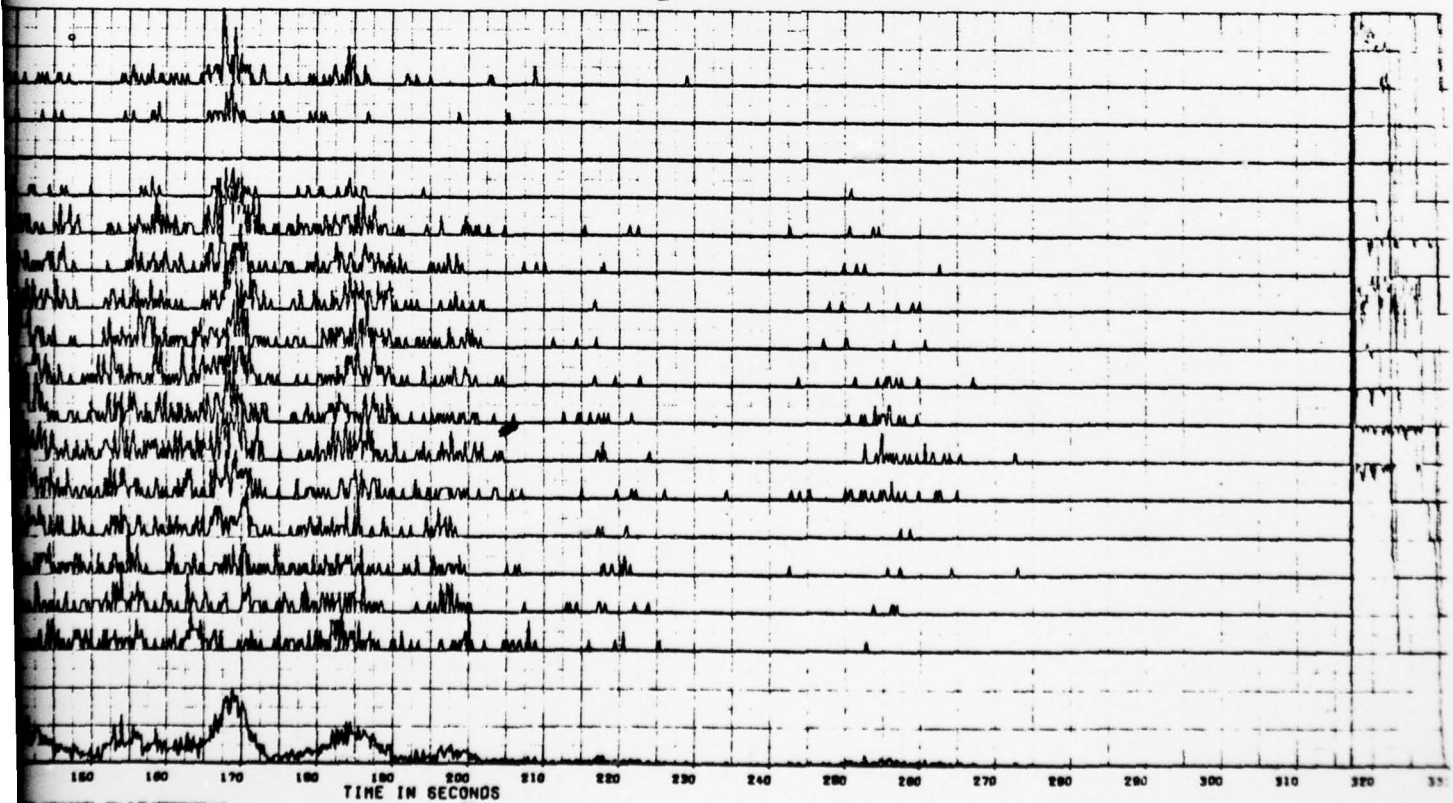
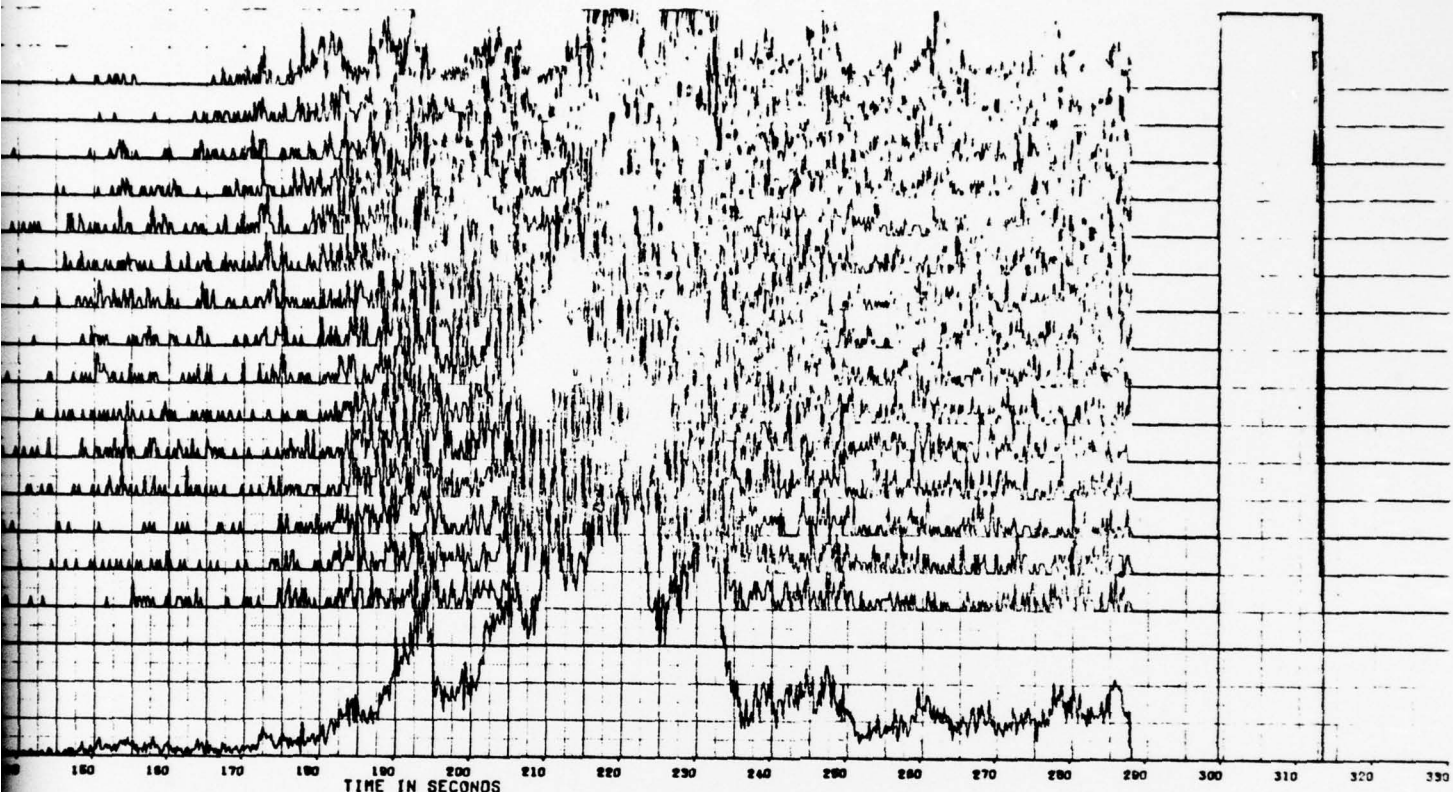
H-61/62

TAGSEA HIT COUNTS vs TIME-1108-SS=1, ALT=3.3KFT DOWN WIND



TAGSEA HIT COUNTS vs TIME-1109-SS=1, ALT=3.3KFT CROSS WIND





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AD-A036 974

GENERAL DYNAMICS/POMONA CALIF POMONA DIV
TAGSEA PROGRAM. VOLUME IV. STANDARD CLUTTER ANALYSIS OUTPUTS.(U)
AUG 76

F/G 17/9

N00017-73-C-2244

NL

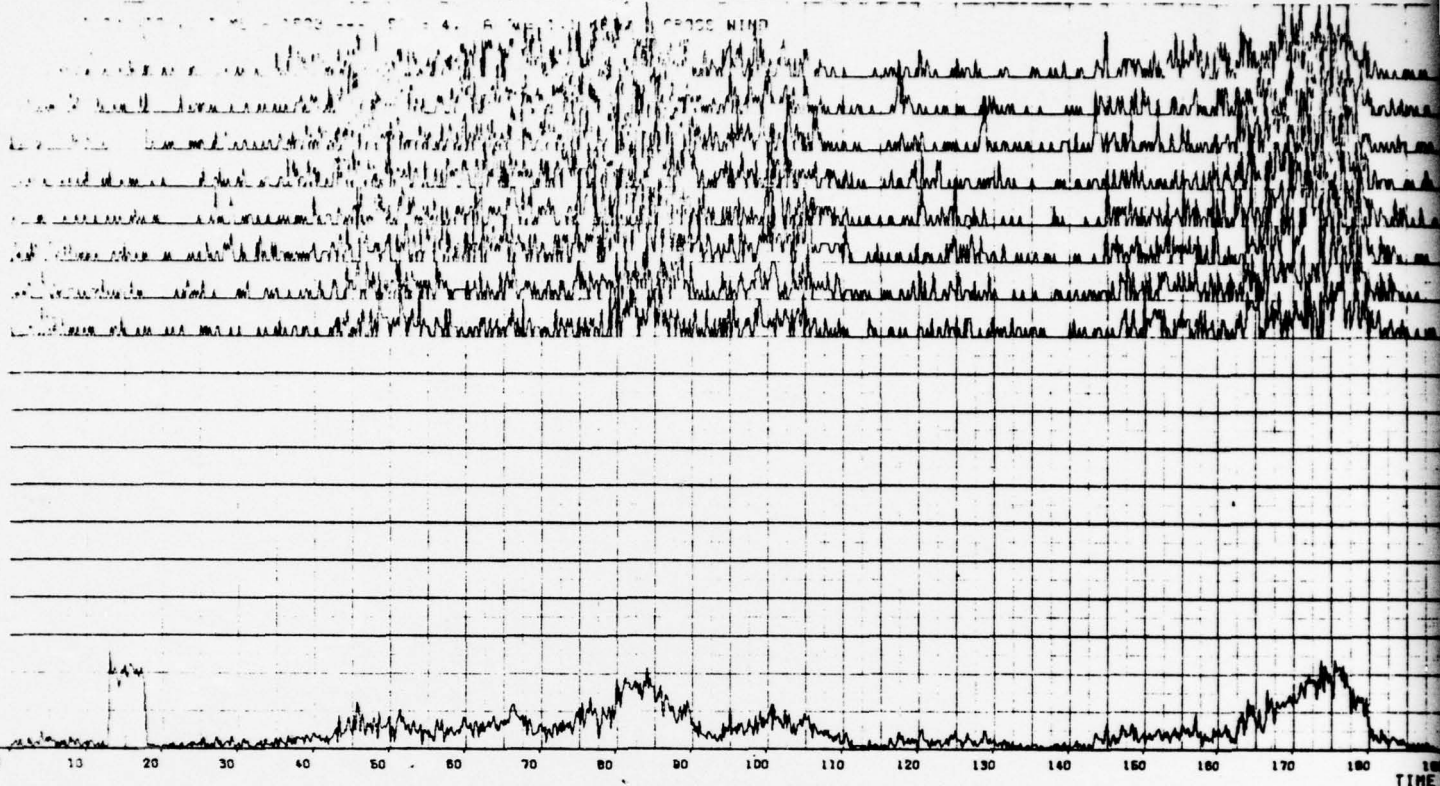
UNCLASSIFIED

5 OF 6
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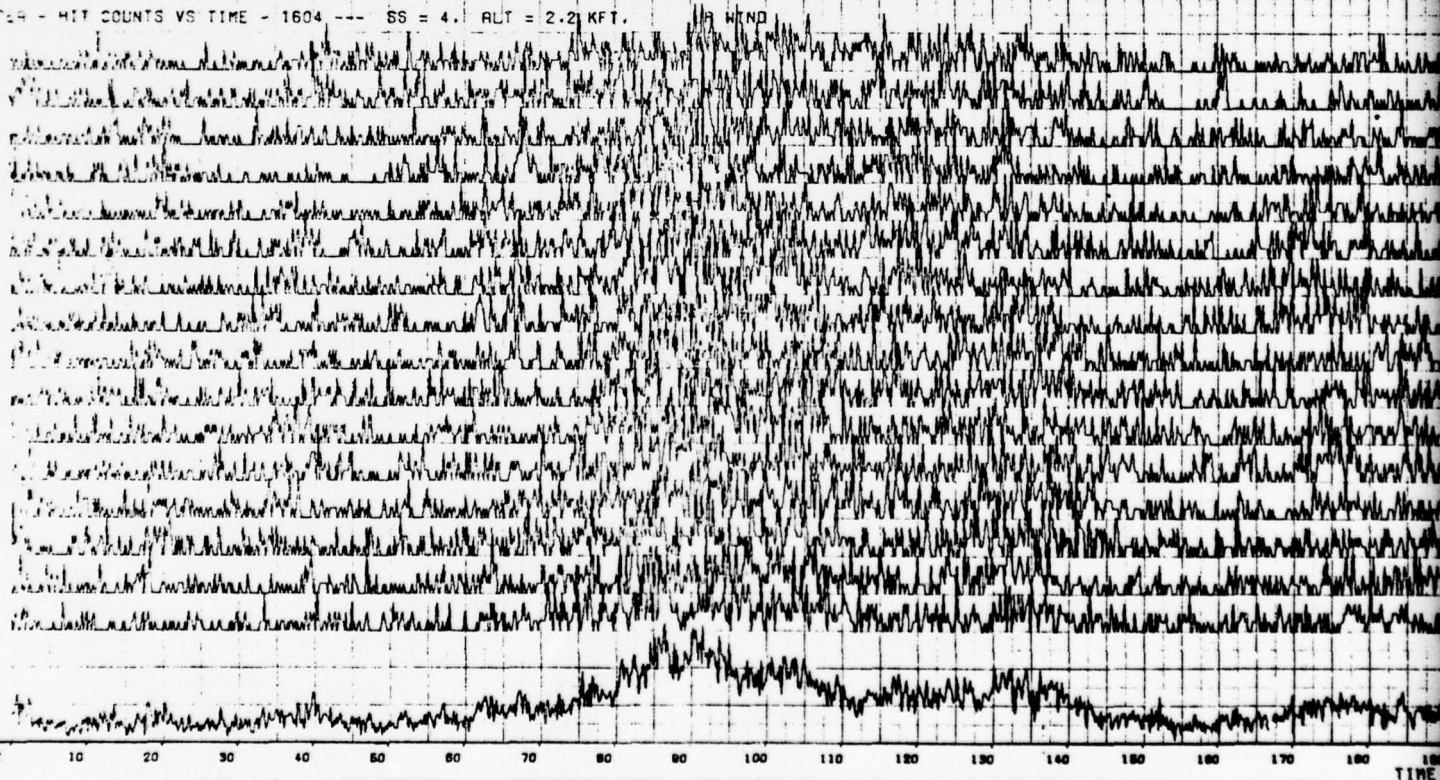
OF 6
36974

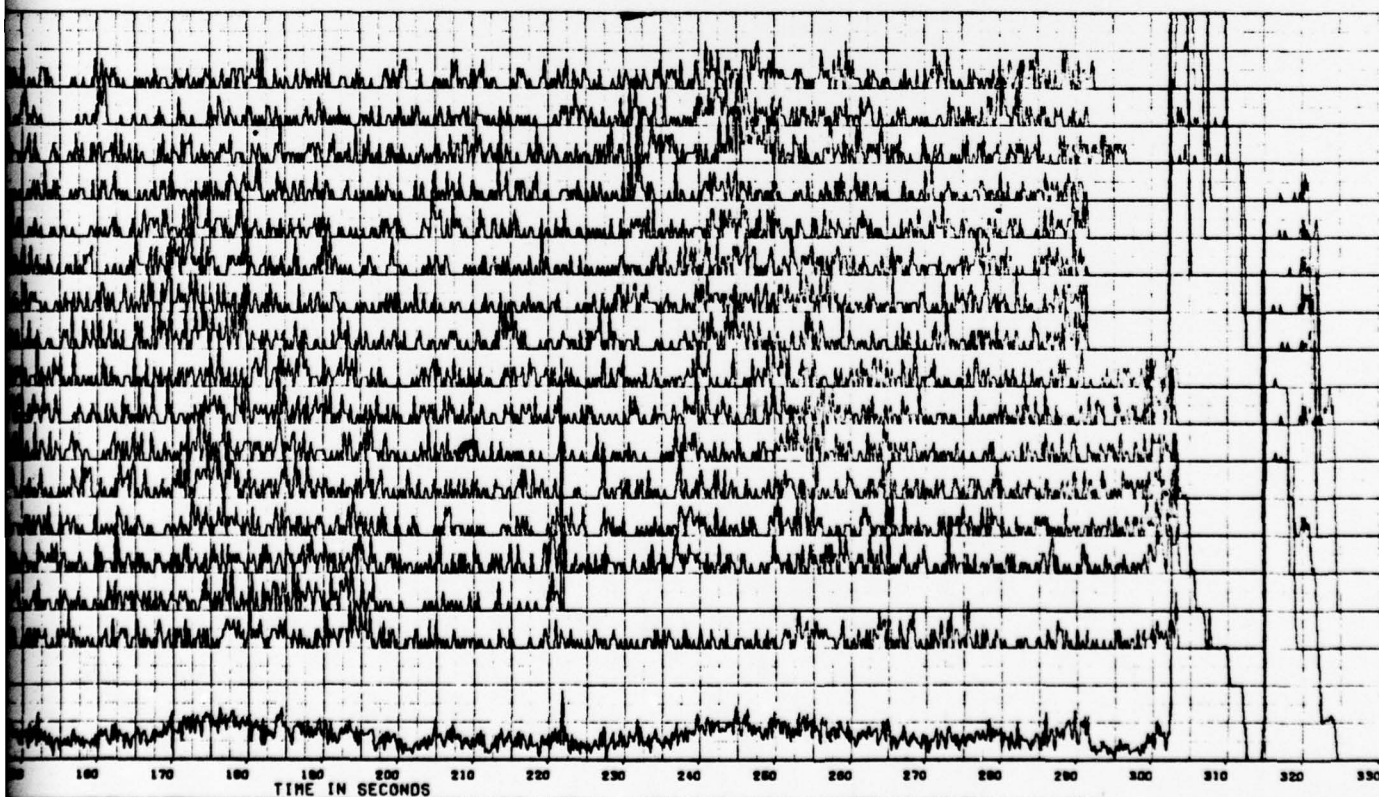
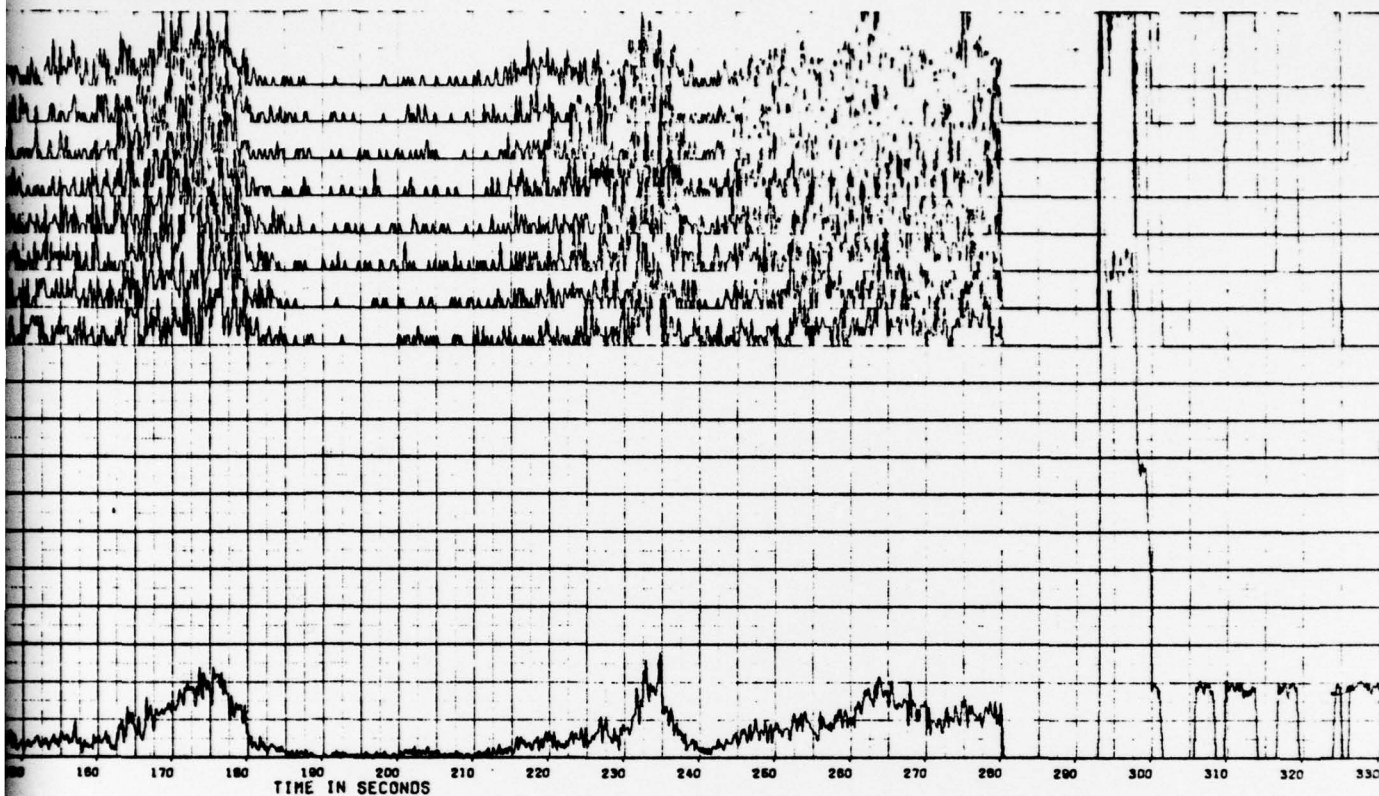
SEA HIT COUNTS vs TIME-1603-SS=4,ALT=1.1KFT CROSS WIND



TAGSEA HIT COUNTS vs TIME-1604-SS=4,ALT=2.2KFT UP WIND

1604 - HIT COUNTS VS TIME - 1604 --- SS = 4. ALT = 2.2 KFT. UP WIND

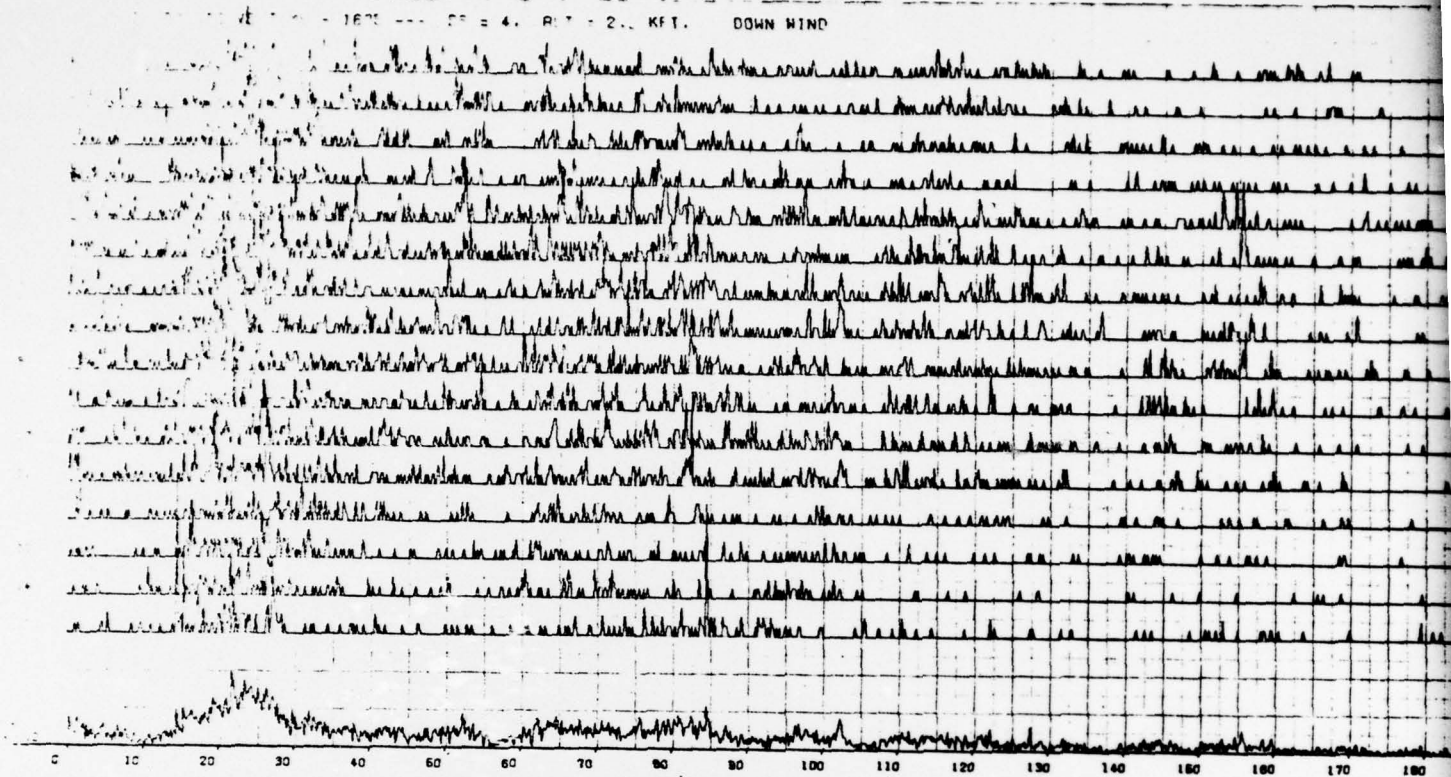




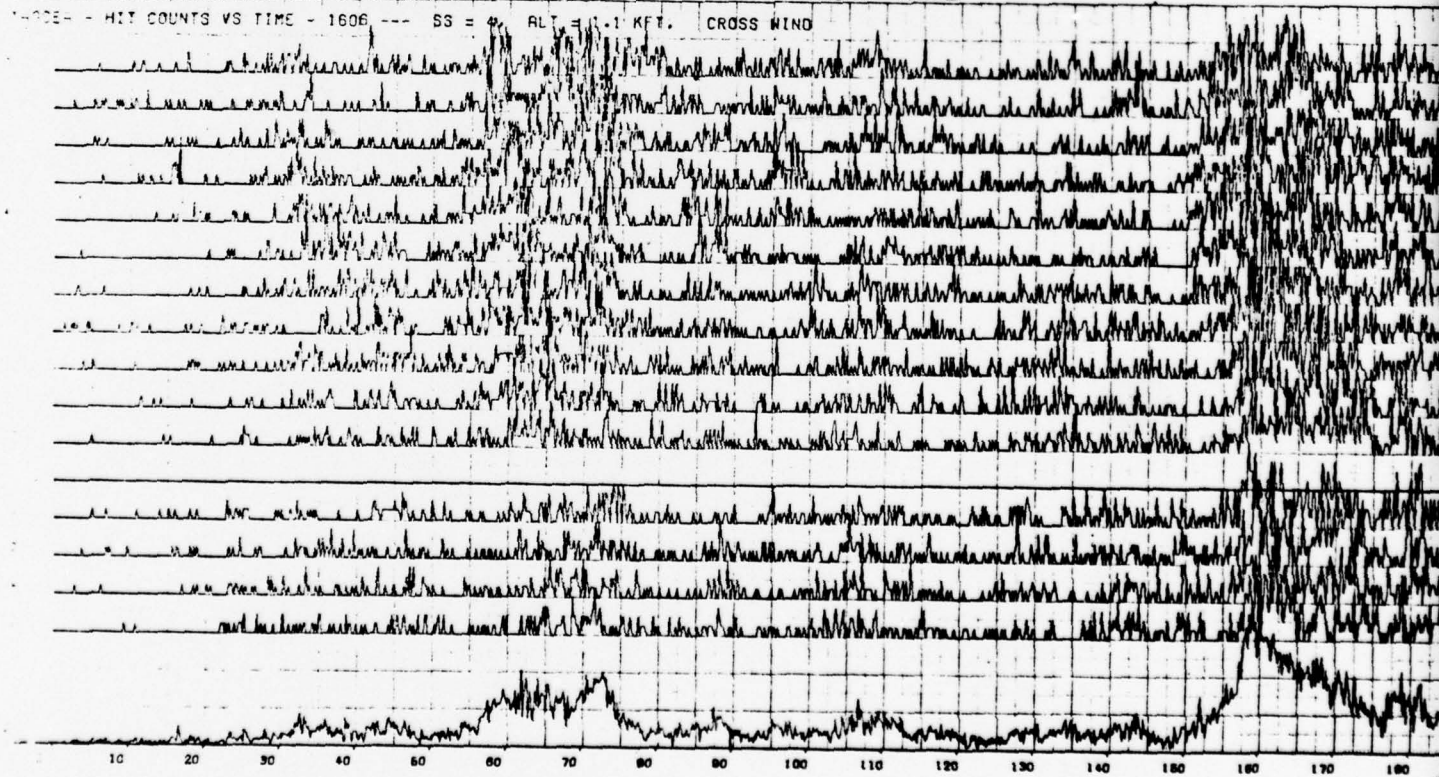
H-65/66

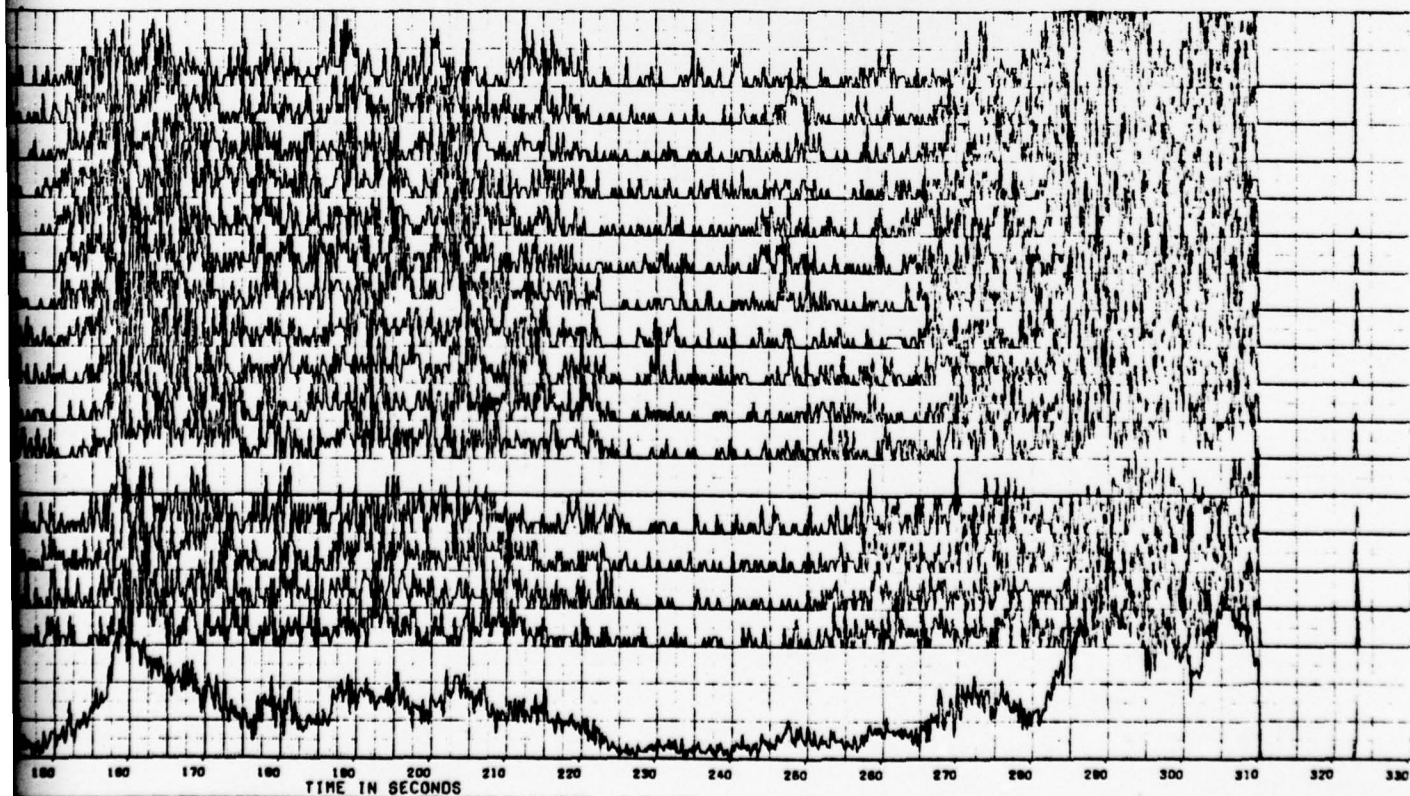
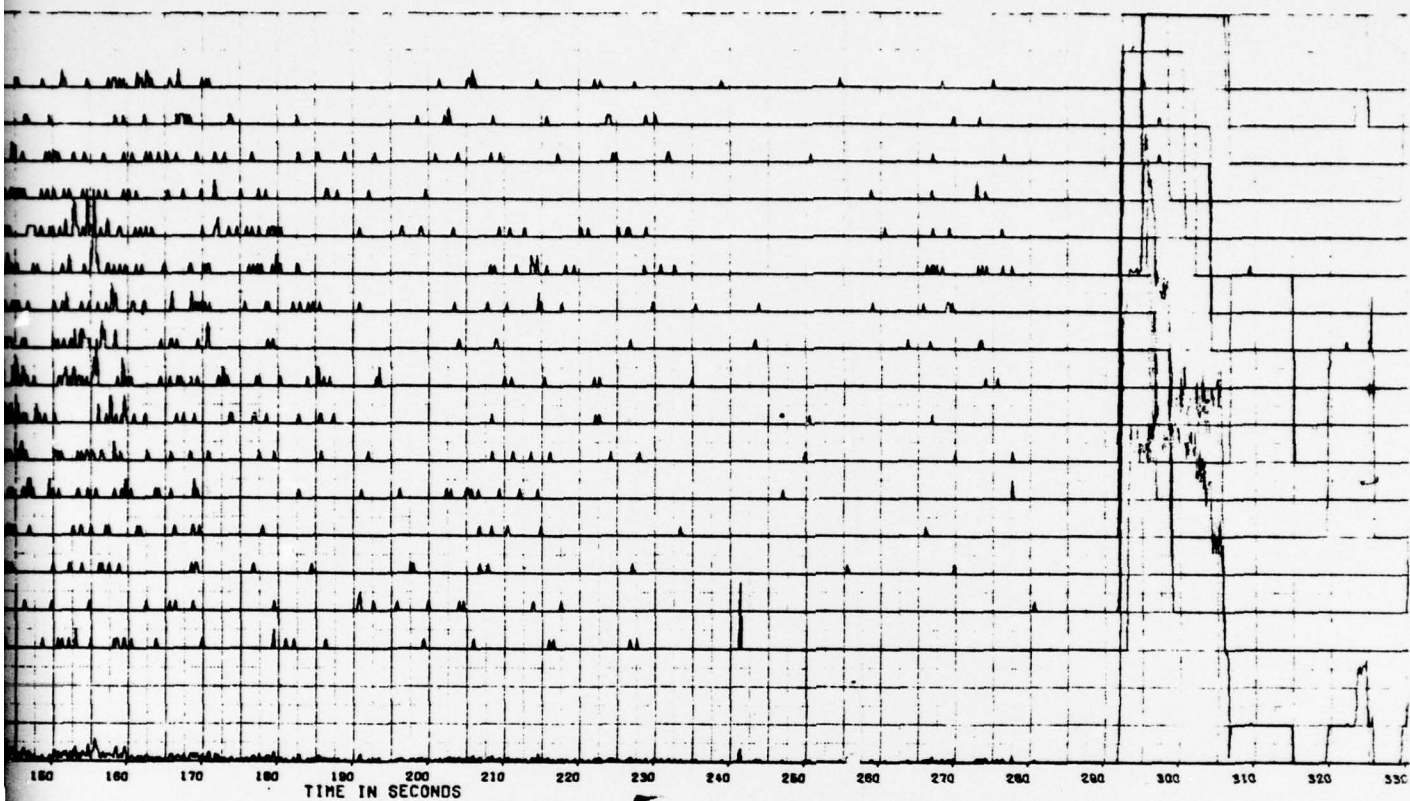
2

AGSEA HIT COUNTS vs TIME-1605-SS=4,ALT=2.2KFT DOWN WIND



TAGSEA HIT COUNTS vs TIME-1606-SS=4,ALT=1.1KFT CROSS WIND

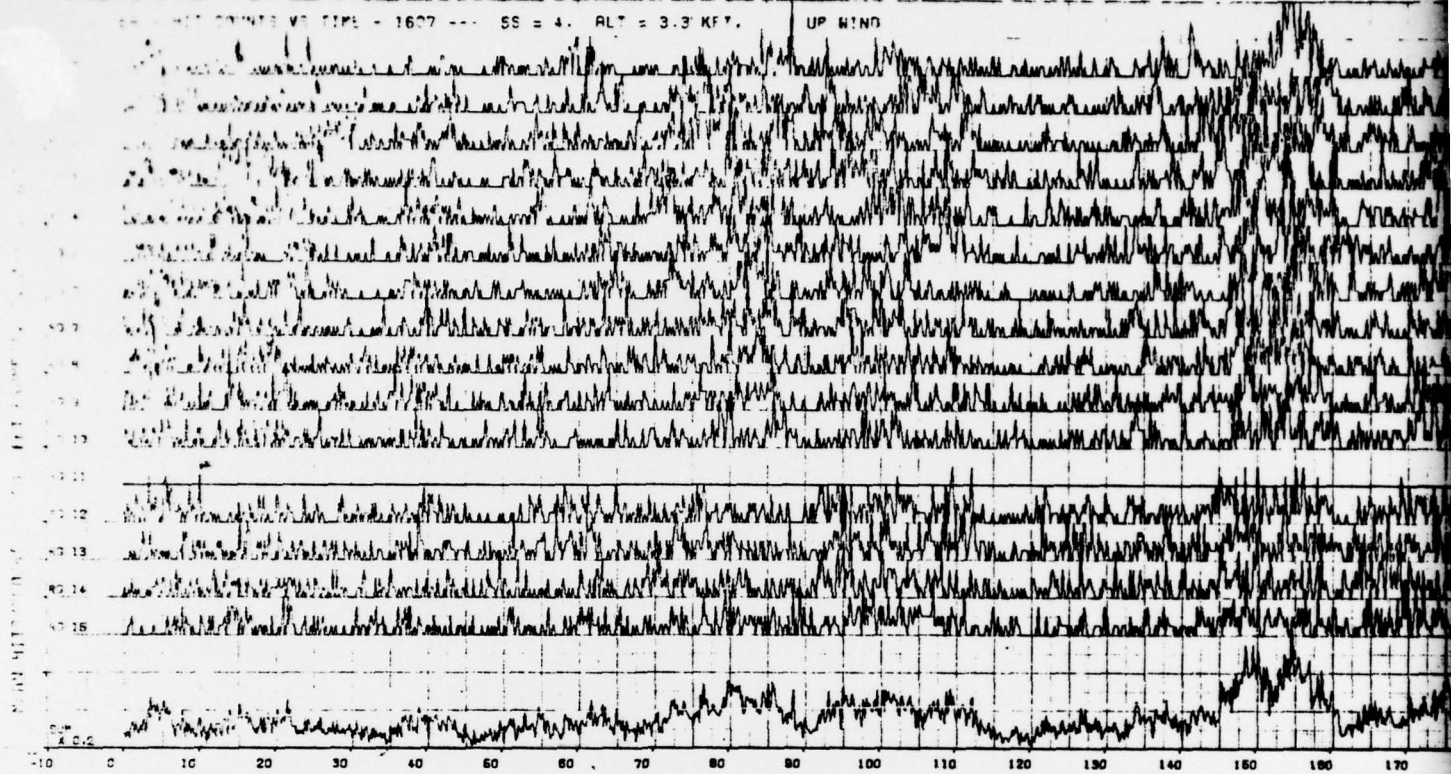




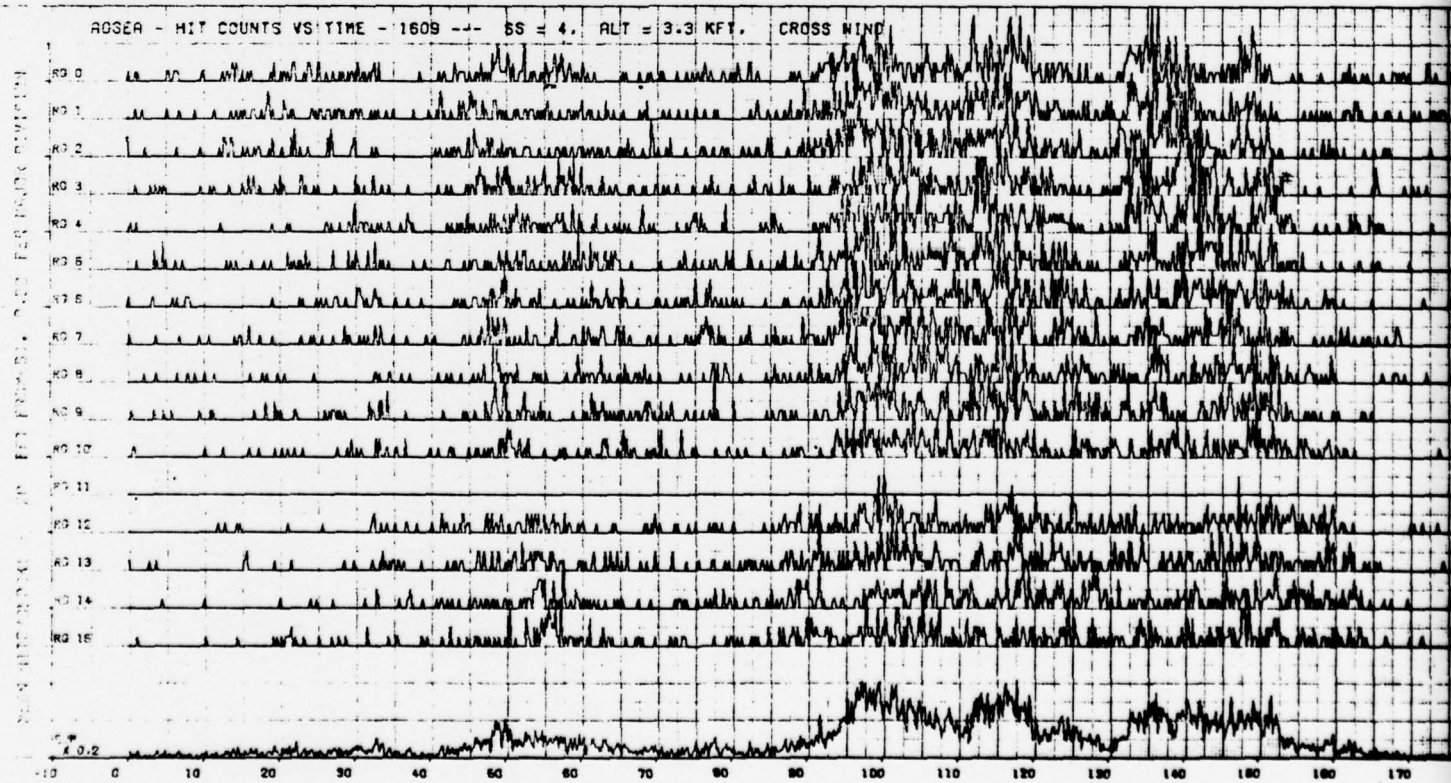
H-67/68

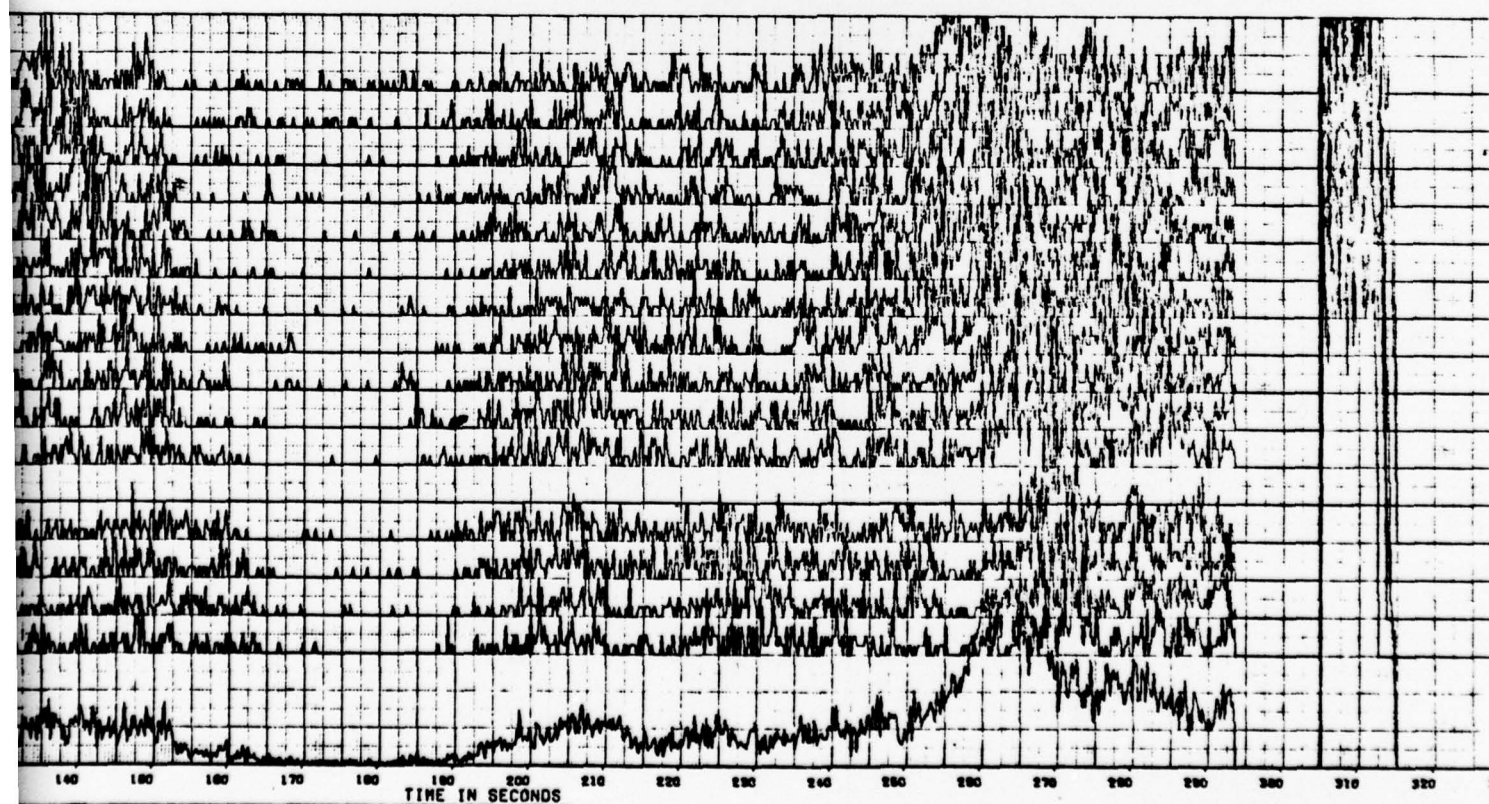
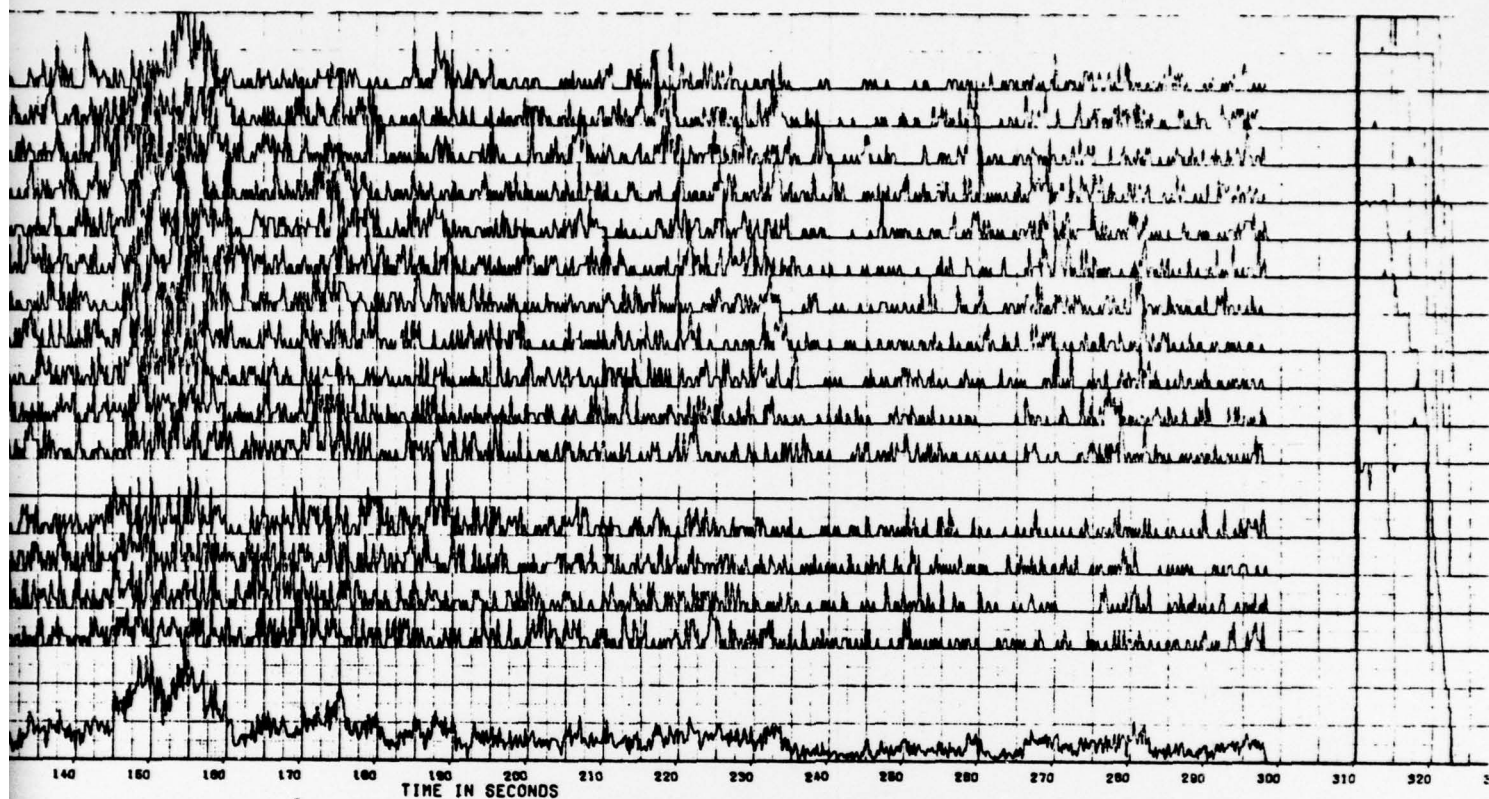
2

TAGSEA HIT COUNTS vs TIME-1607-SS=4,ALT=3.3KFT UP WIND



TAGSEA HIT COUNTS vs TIME-1609-SS=4,ALT=3.3KFT CROSS WIND



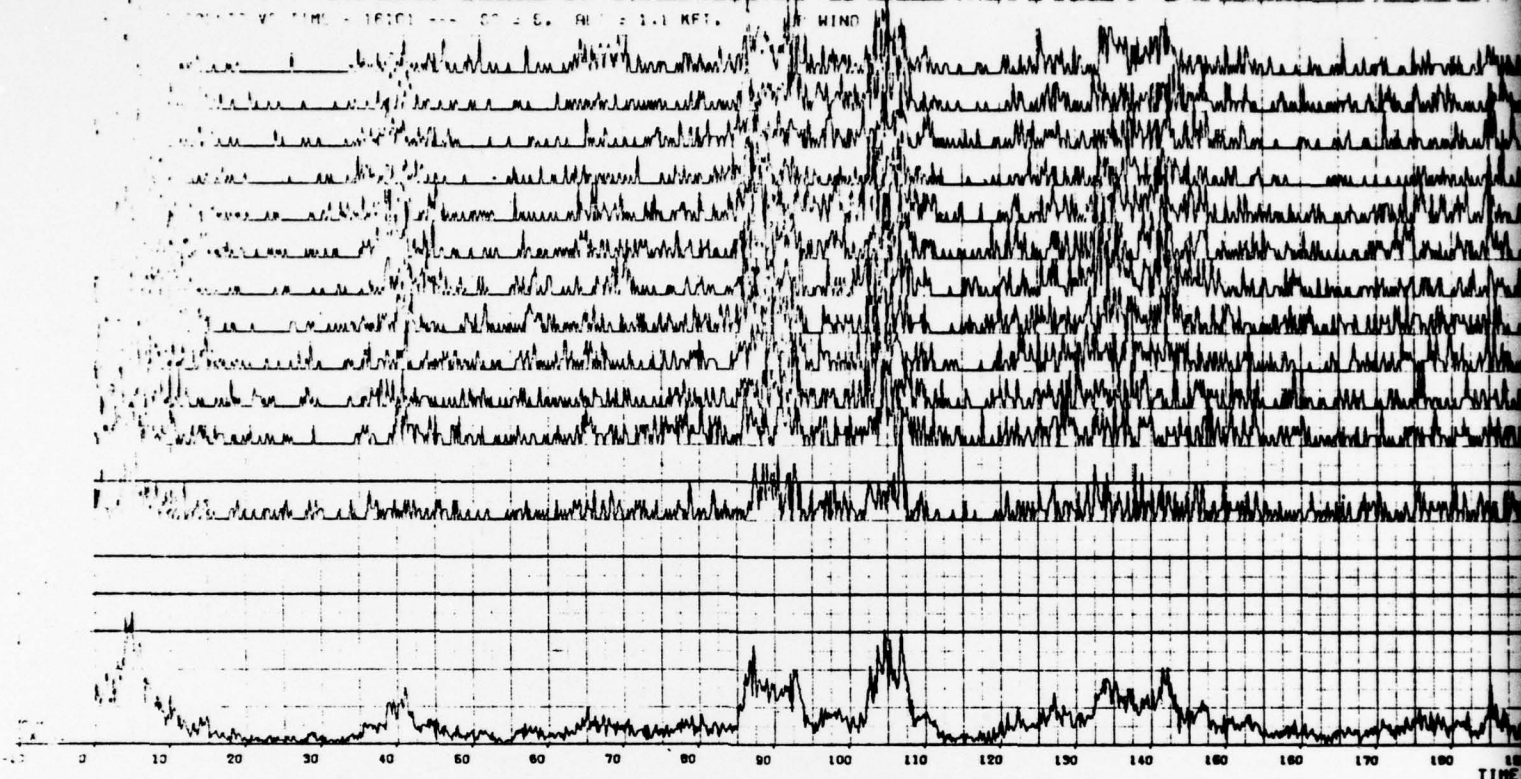


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2

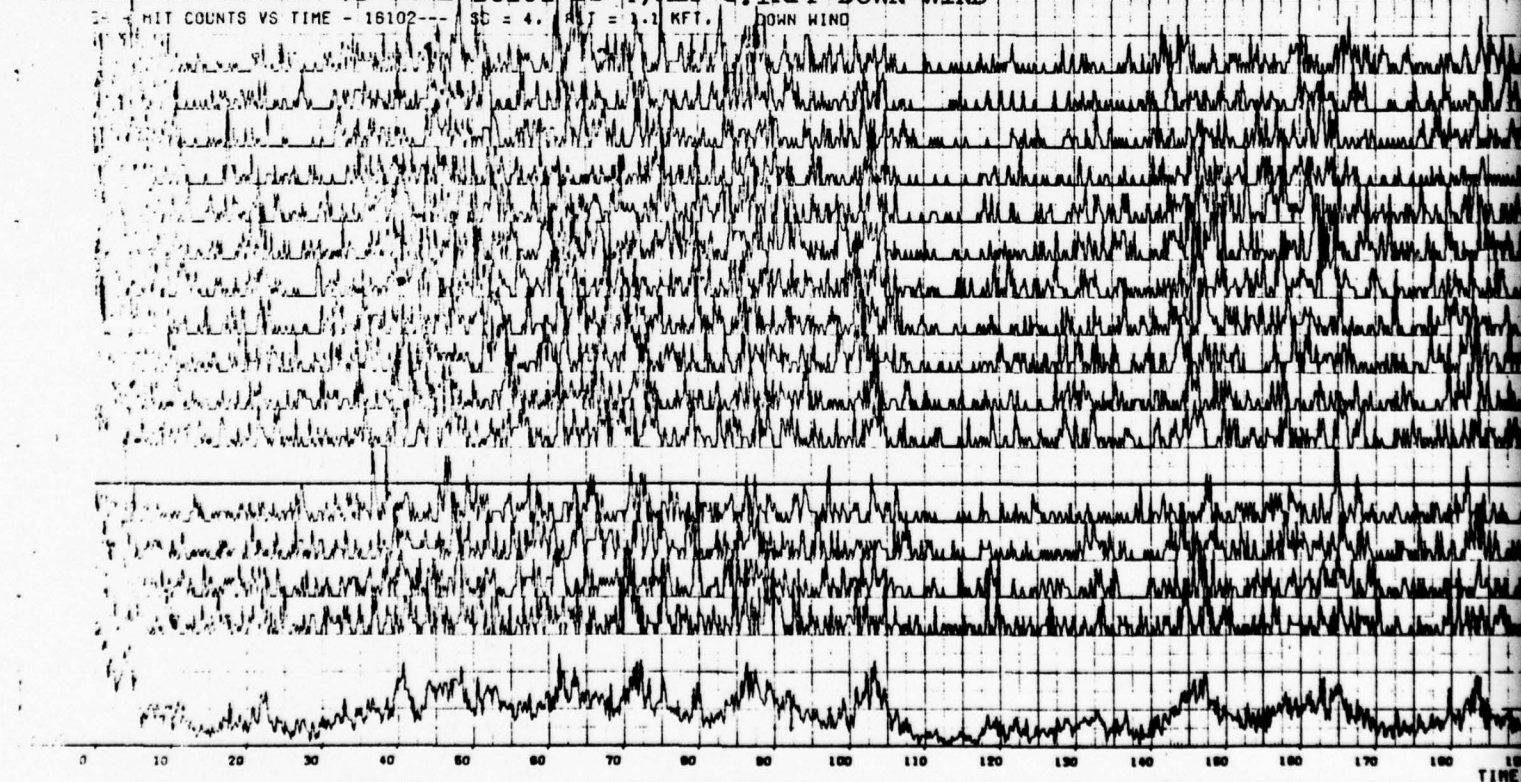
AGSEA HIT COUNTS vs TIME-16101-SS=5,ALT=1.1KFT UP WIND

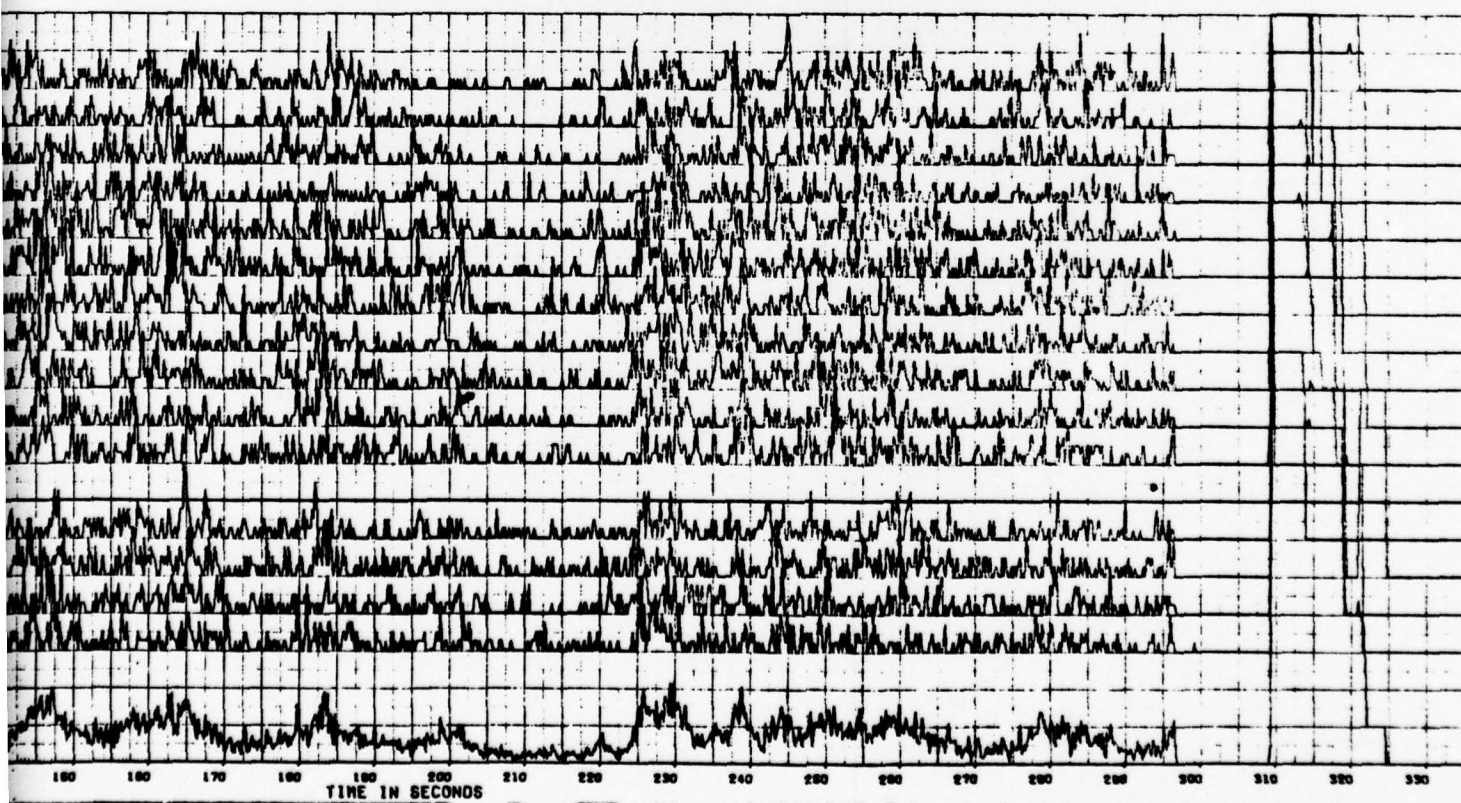
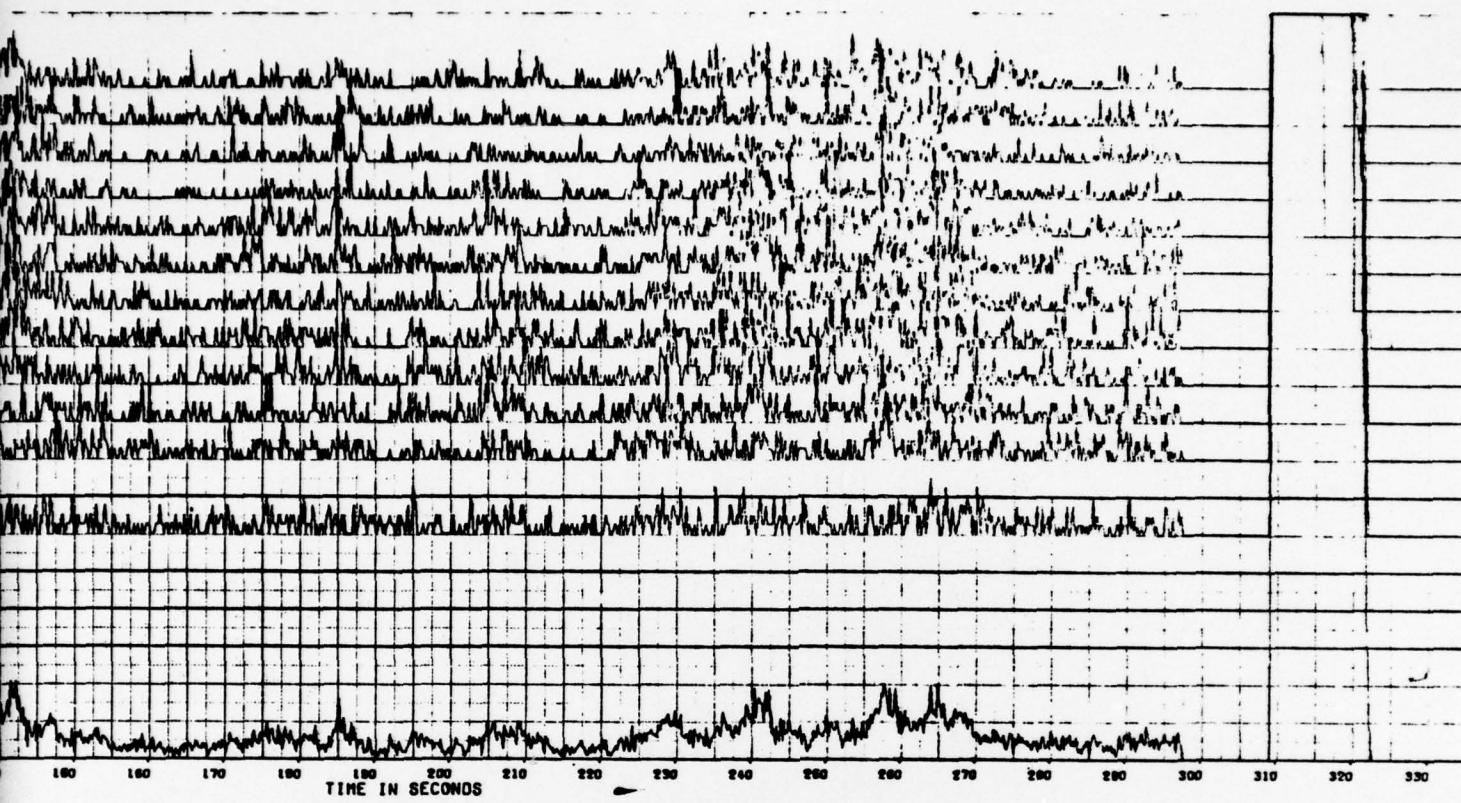
HIT COUNTS VS TIME - 16101 --- SS = 5. ALT = 1.1 KFT. UP WIND



TAGSEA HIT COUNTS vs TIME 16102 SS=4,ALT=1.1KFT DOWN WIND

HIT COUNTS VS TIME - 16102 --- SS = 4. ALT = 1.1 KFT. DOWN WIND

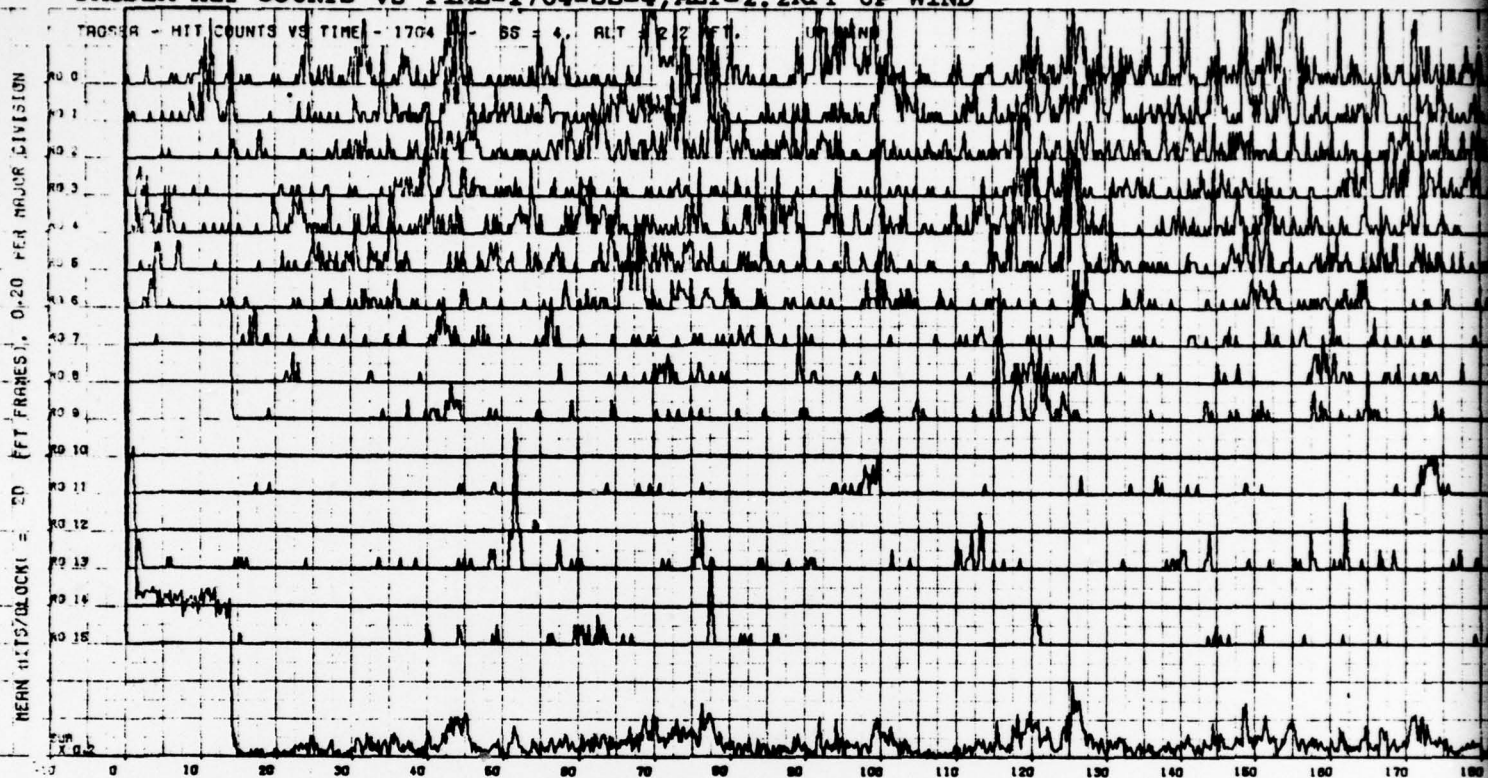




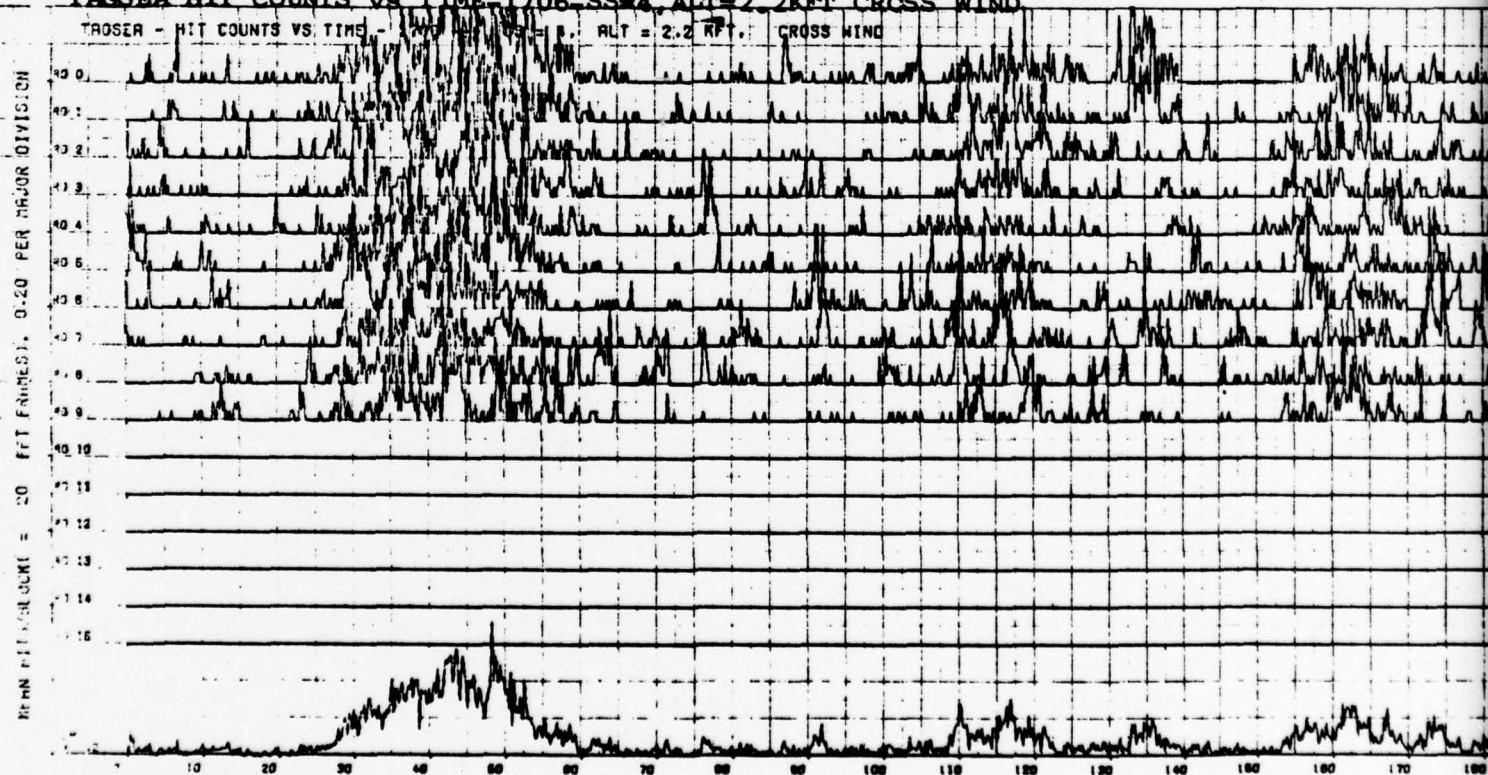
H-71/72

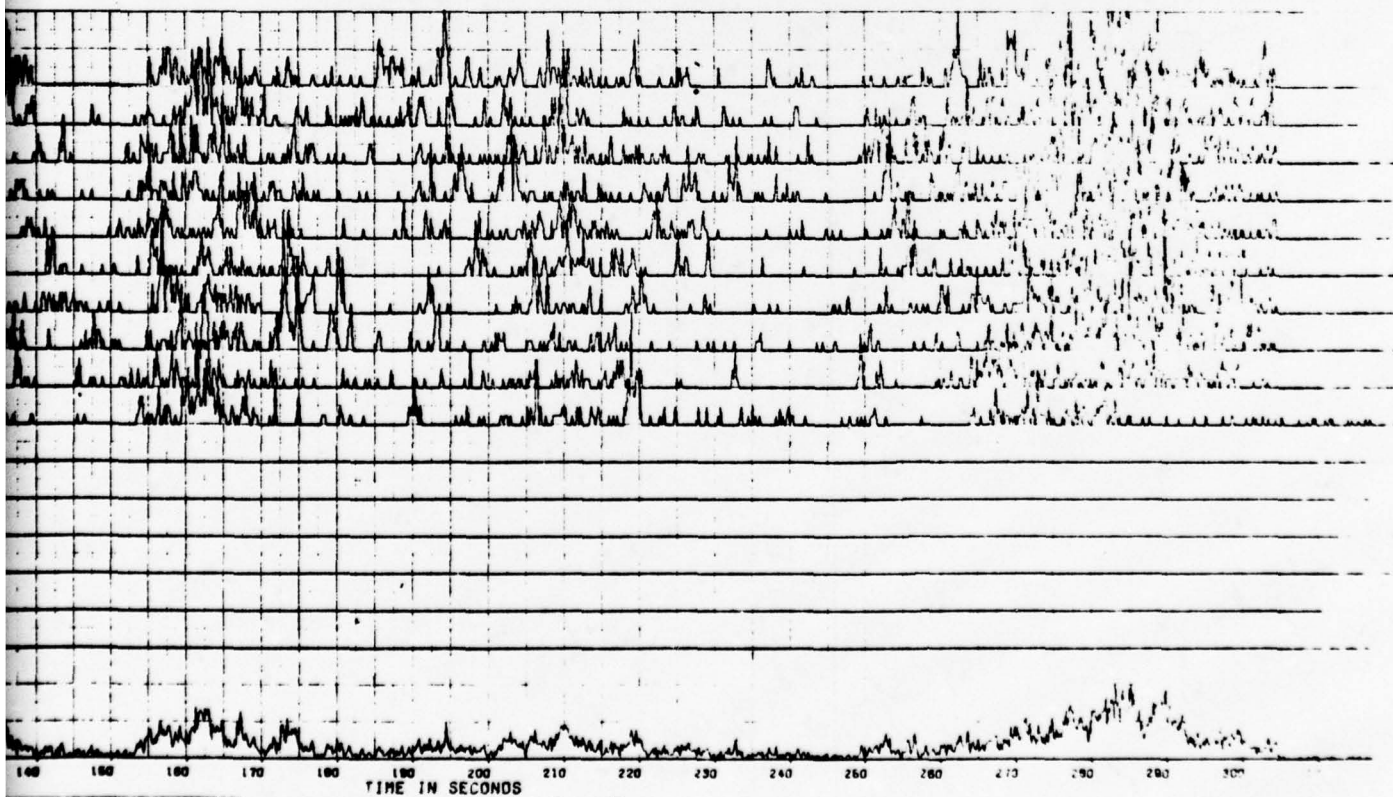
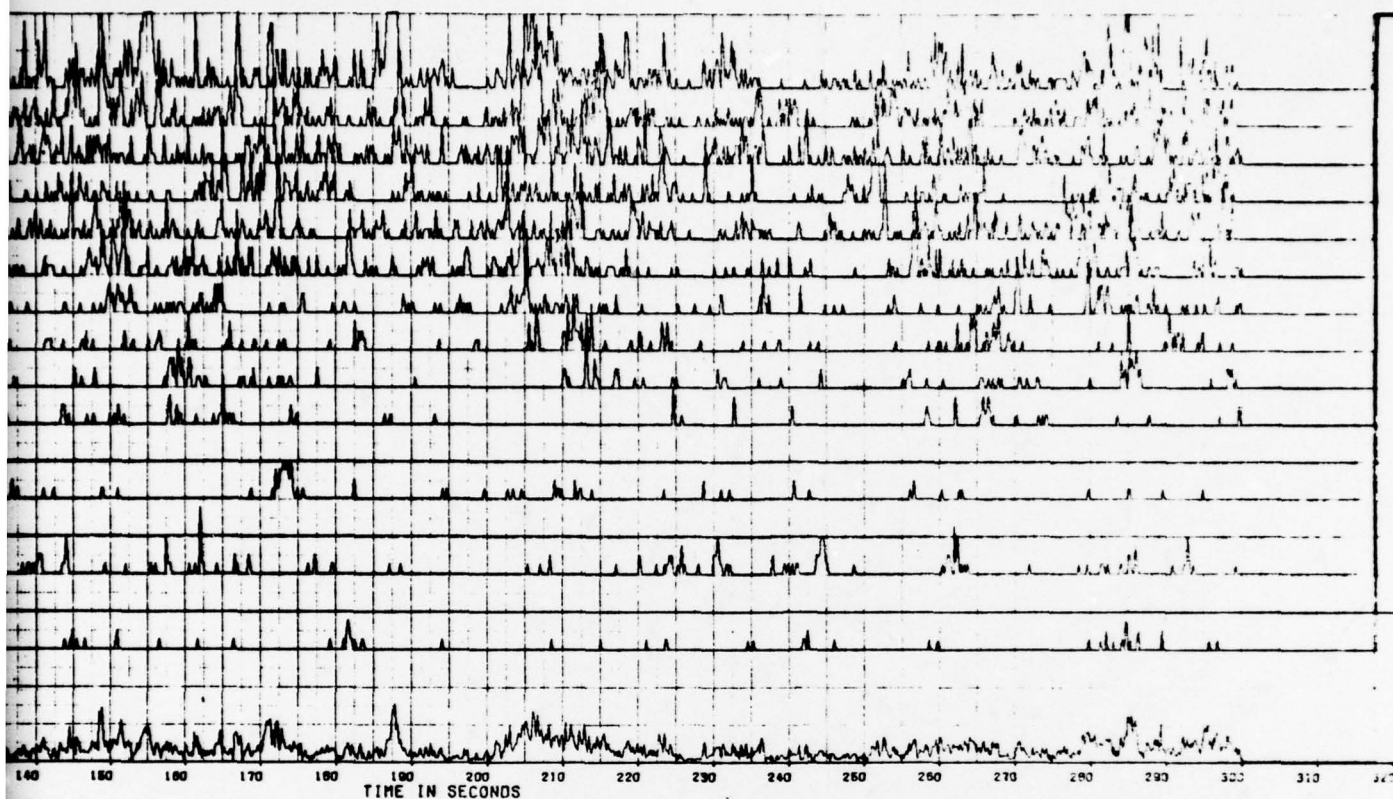
2

TAGSEA HIT COUNTS vs TIME-1704-SS=4, ALT=2.2KFT UP WIND



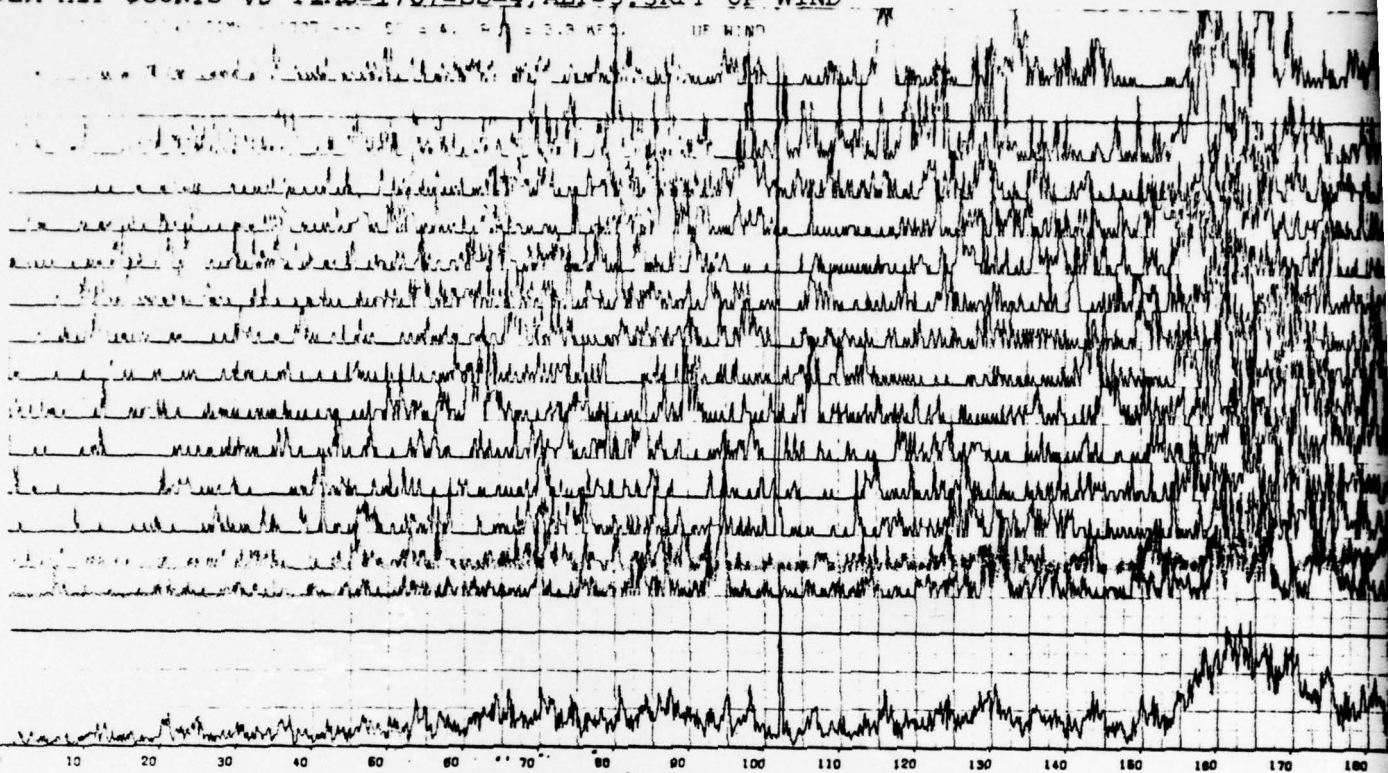
TAGSEA HIT COUNTS vs TIME-1706-SS=4, ALT=2.2KFT CROSS WIND

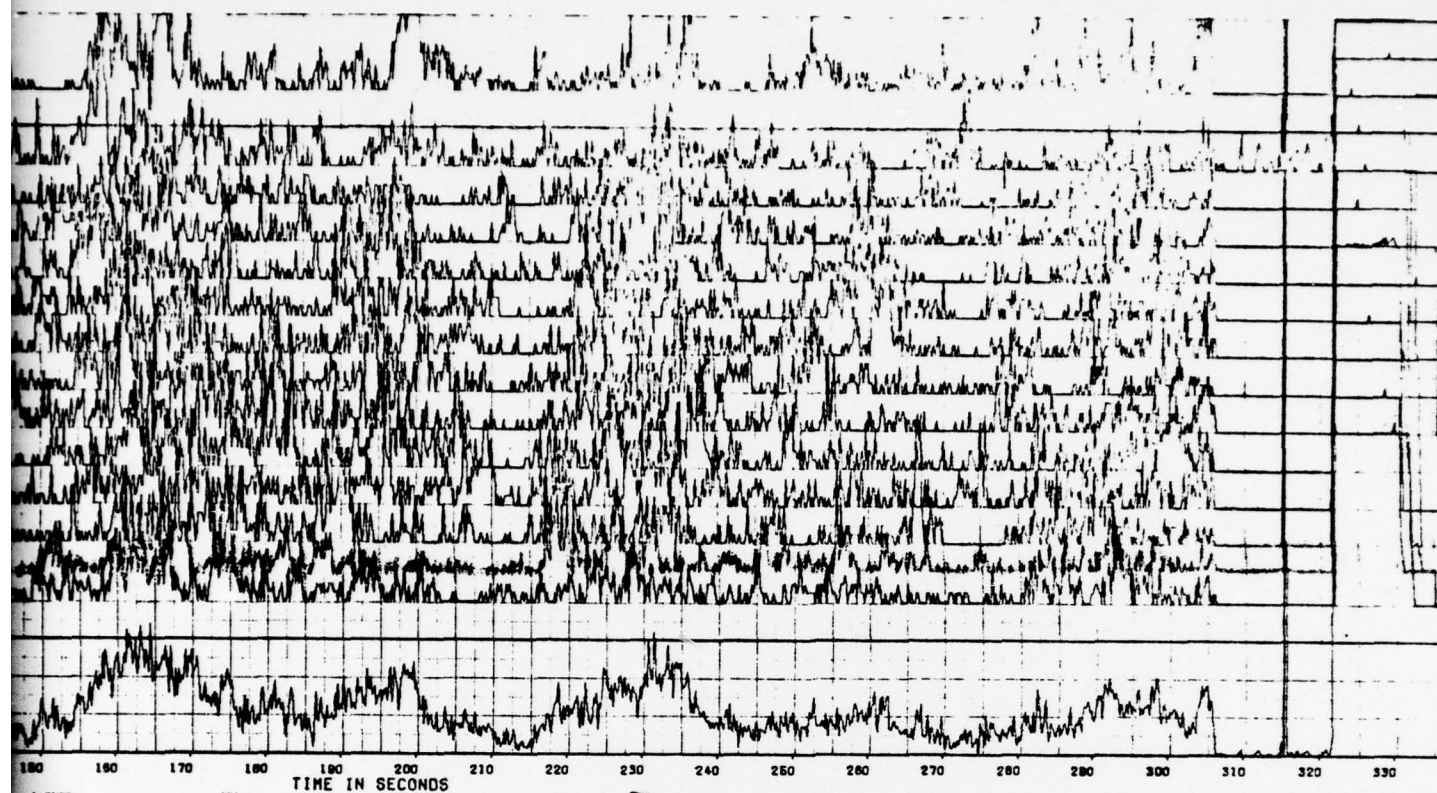




H-73-4

SEA HIT COUNTS vs TIME-1707-SS=4, ALT=3.3KFT UP WIND





H-75/76

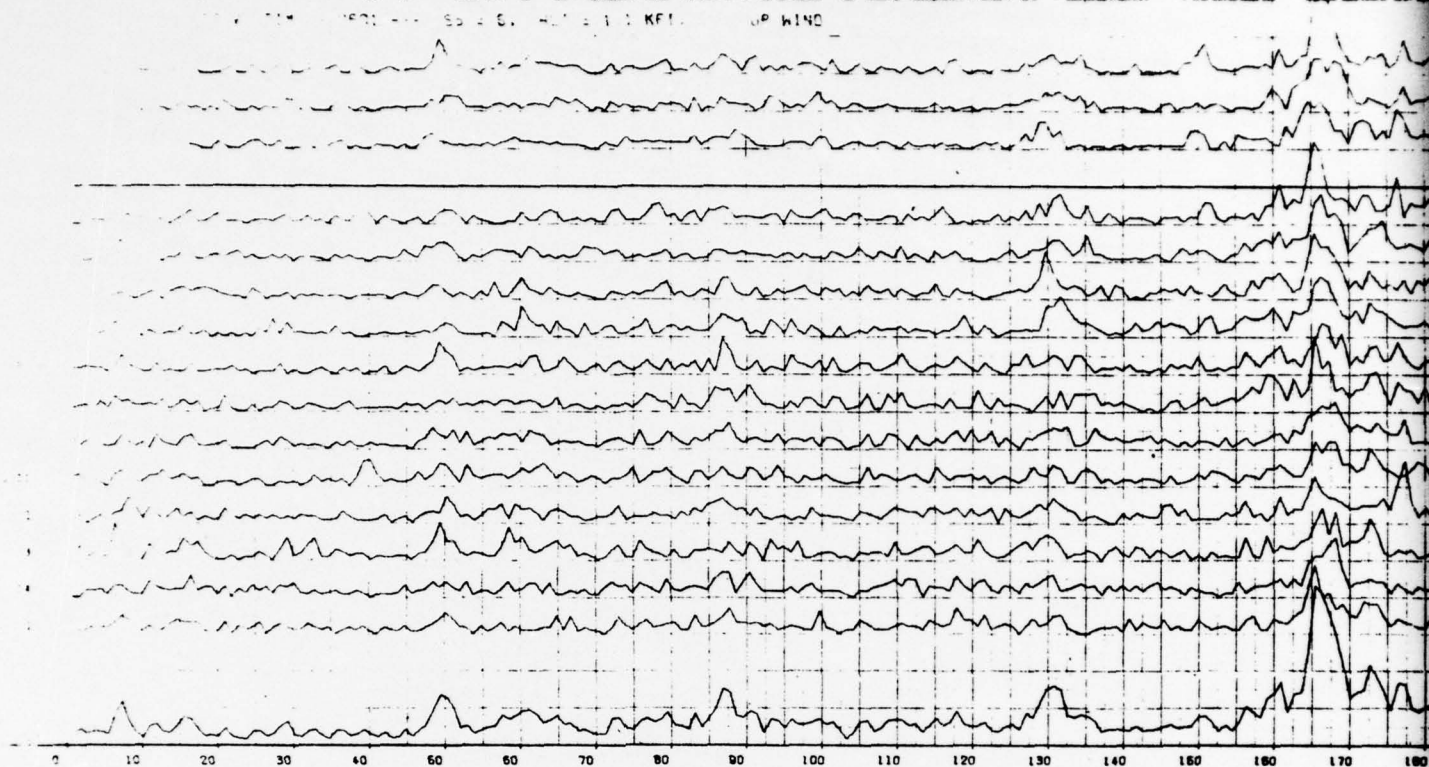
2

UNCLASSIFIED

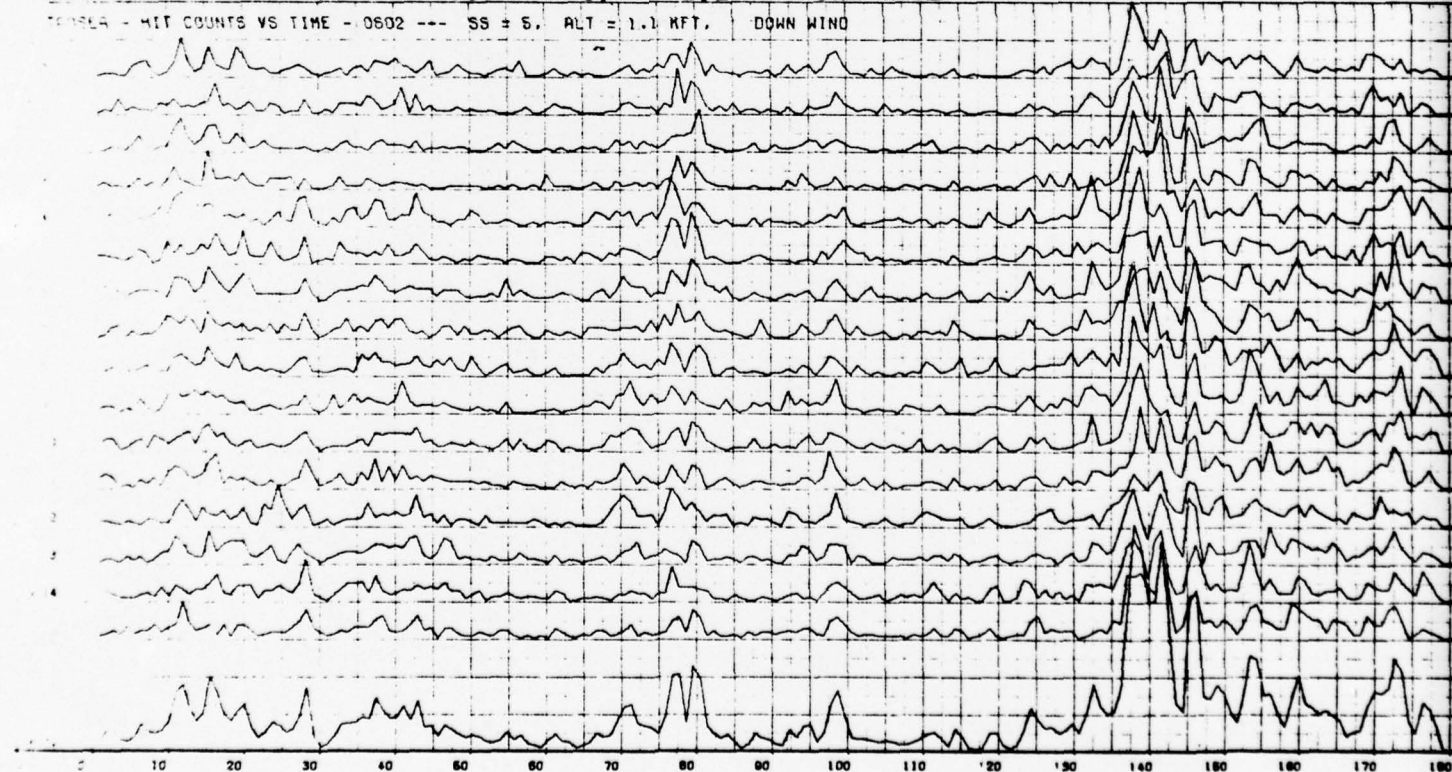
1.2.2 Hit Counts vs. Time (Coarse Grained)

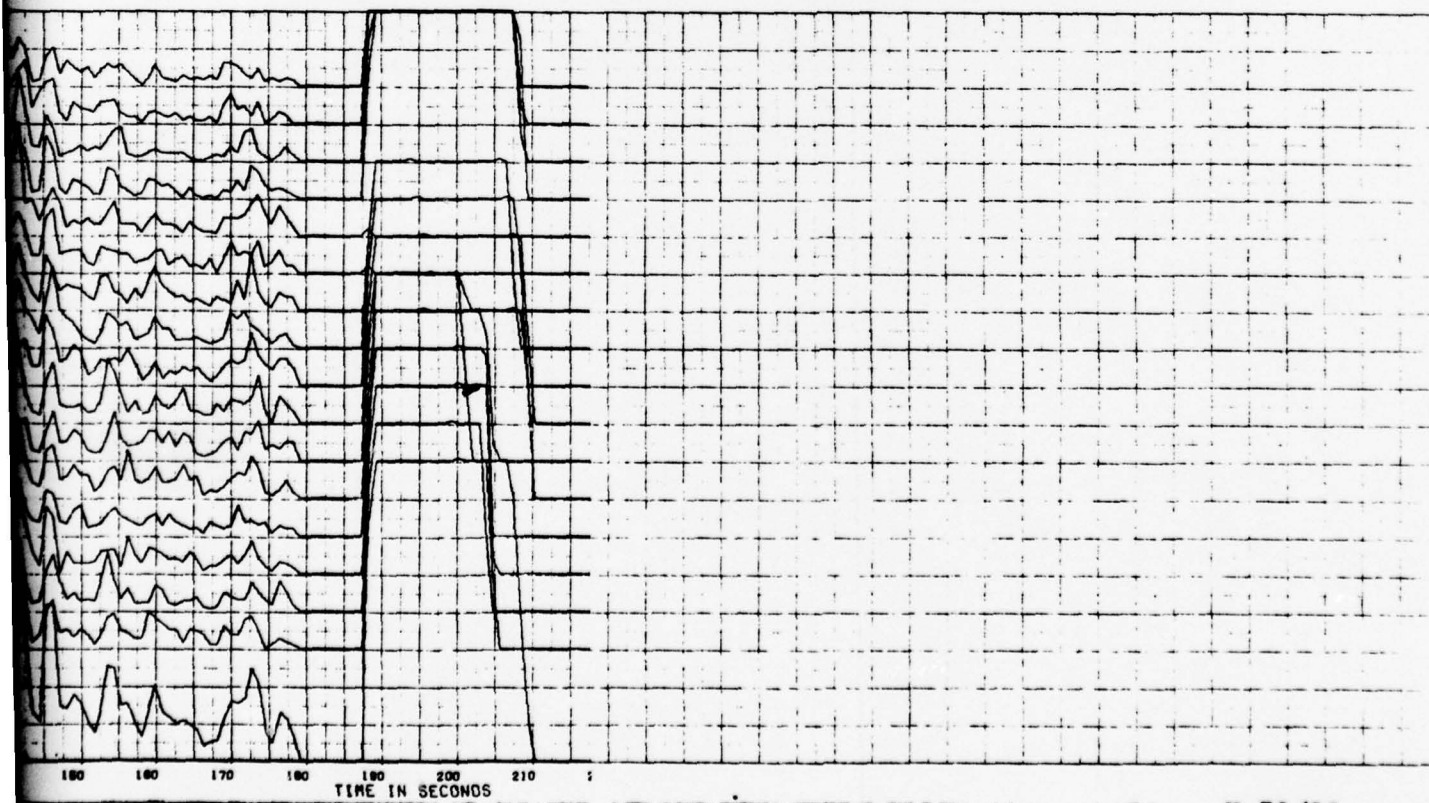
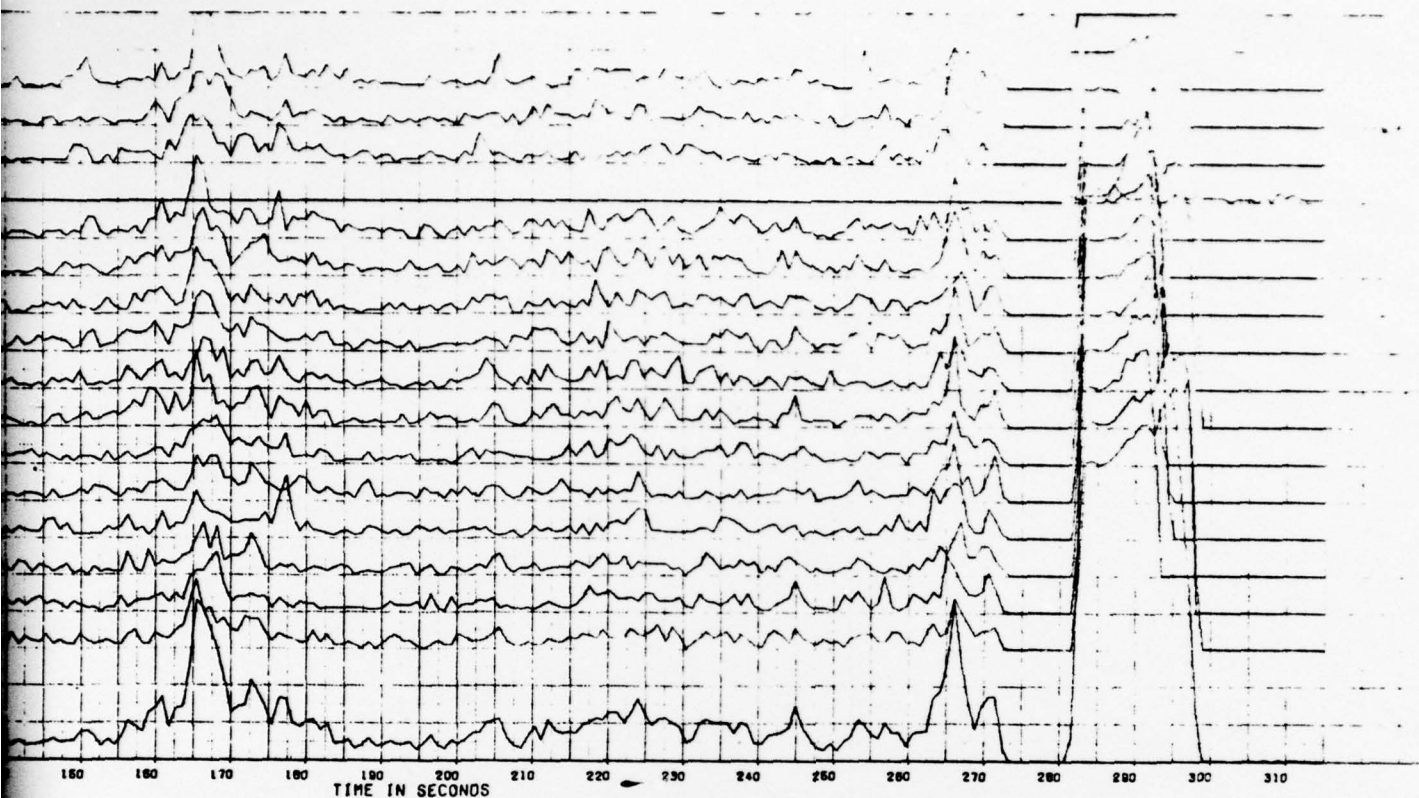
Hit counts vs. time plots given here characterize mean hits exceeding a nominal 10^{-3} threshold per block of time in each range gate. Coarse hit counts were summed over a block 100 FFT time frames (about 0.914 second) and normalized by 100. The ordinate scale factor was 0.2 hits per major division or 0.09 hits for the smallest division in each plot. Range gate sums were scaled at 0.04 hits per major division. The abscissa scale factor is time in seconds. One second is exactly $14000/128 = 109.375$ FFT frames. This factor is useful for comparison of hit counts vs. time with other outputs in the report.

TAGSEA HIT COUNTS vs TIME-0601-SS=5,ALT=1.1KFT UP WIND



TAGSEA HIT COUNTS vs TIME-0602-SS=5,ALT=1.1KFT DOWN WIND

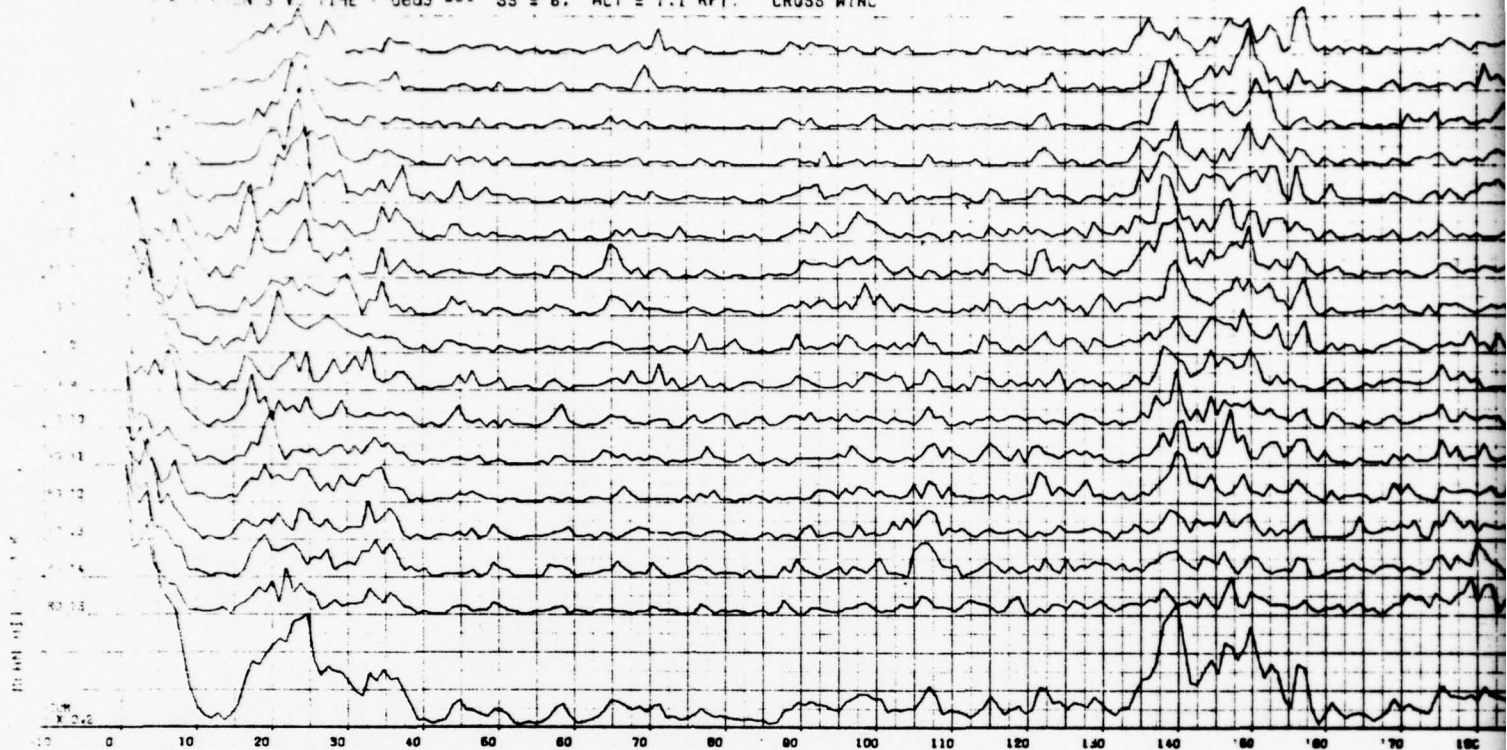




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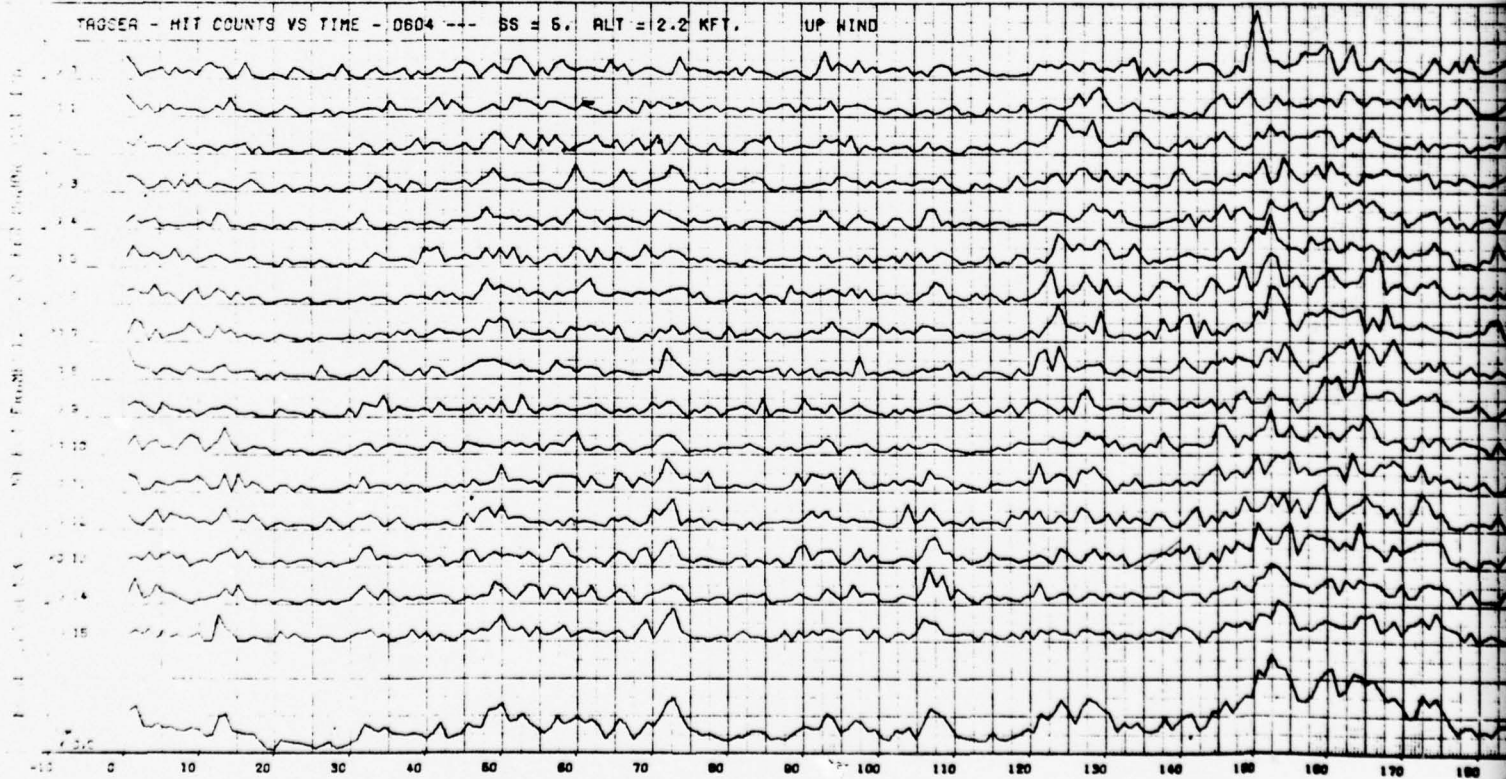
TAGSEA HIT COUNTS vs TIME-0603-SS=5,ALT=1.1KFT CROSS WIND

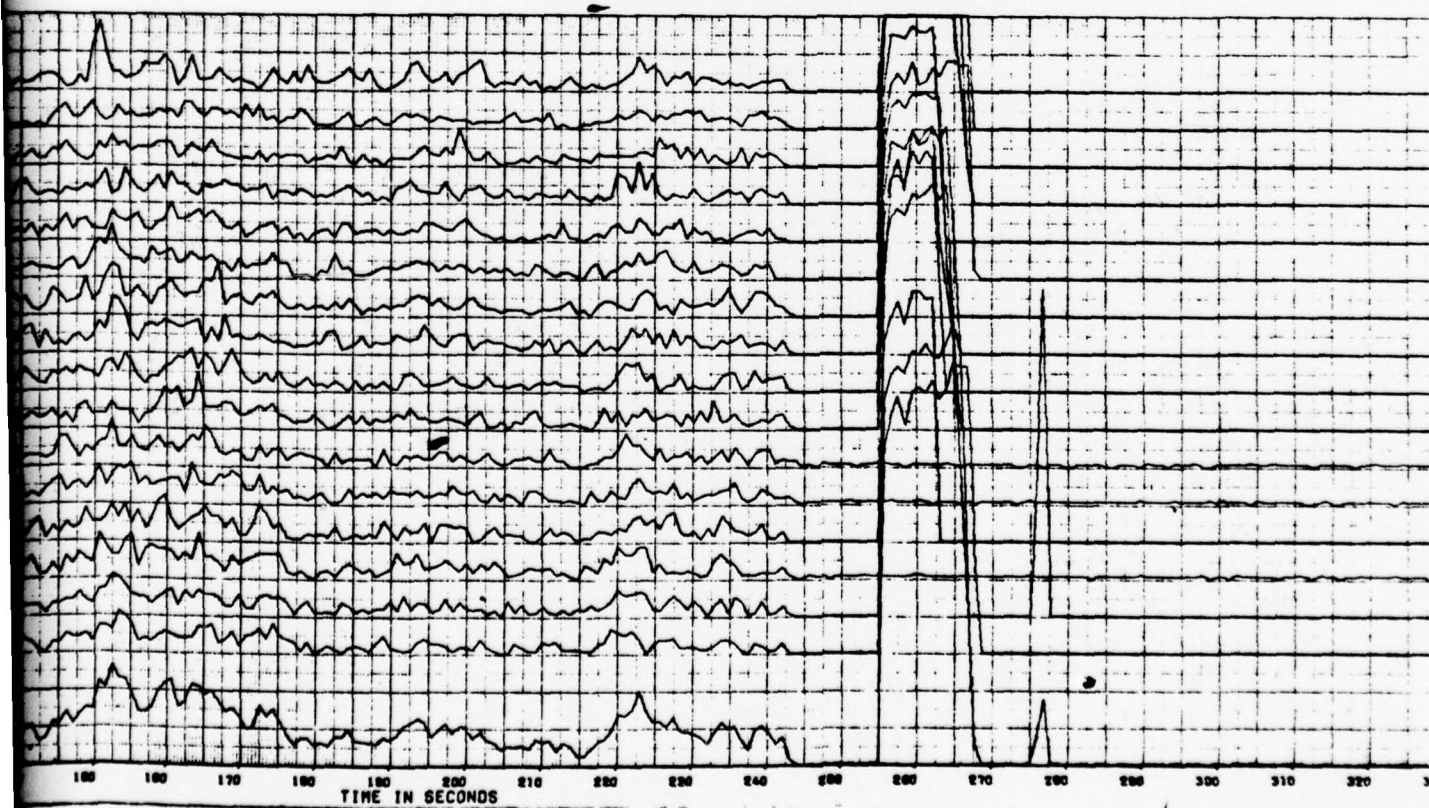
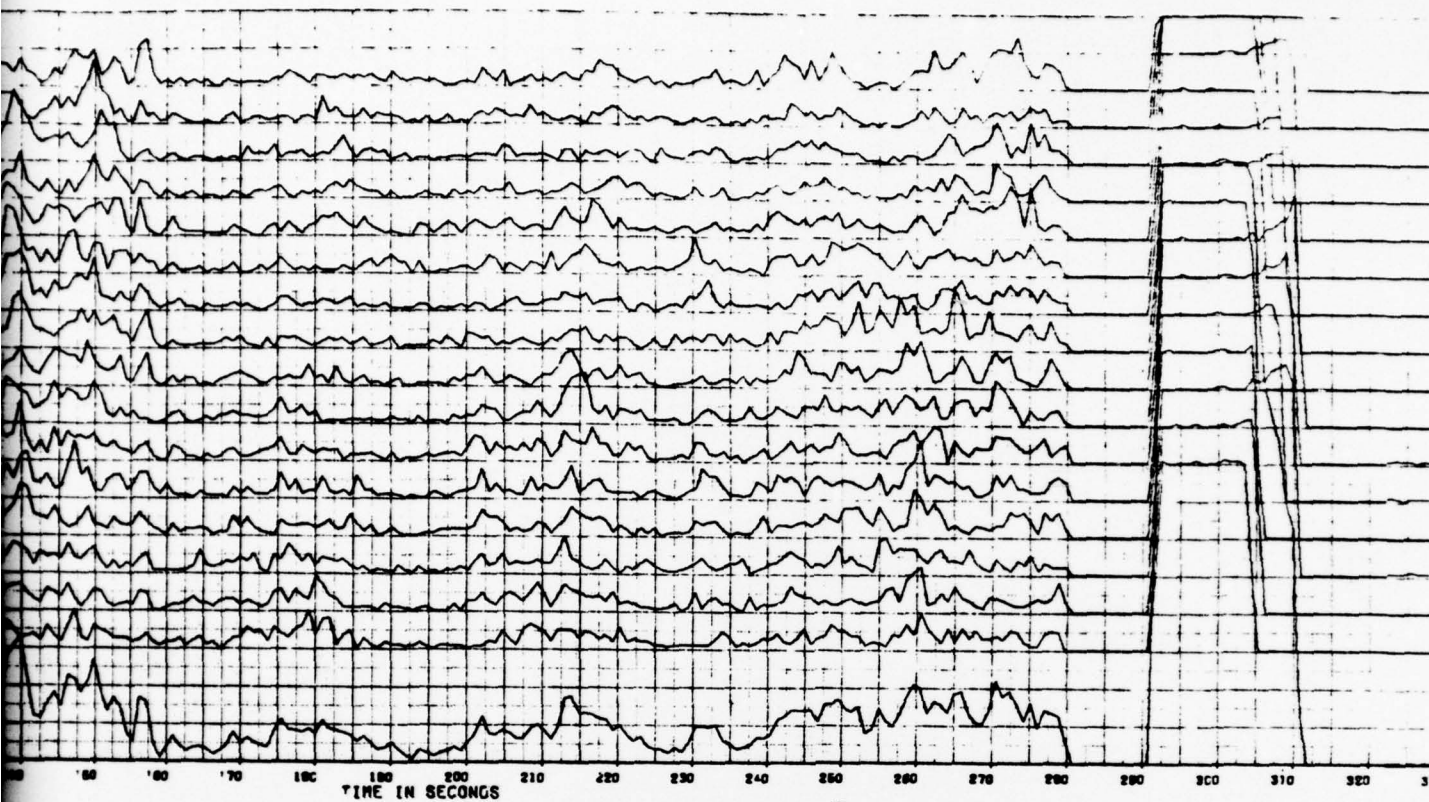
HIT COUNTS VS TIME - 0603 --- SS = 5, ALT = 1.1 KFT, CROSS WIND



TAGSEA HIT COUNTS vs TIME-0604-SS=5,ALT=2.2KFT UP WIND

TAGSEA - HIT COUNTS VS TIME - 0604 --- SS = 5, ALT = 2.2 KFT, UP WIND





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AGSEA HIT COUNTS vs TIME-0605-SS=5,ALT=2.2KFT DOWN WIND

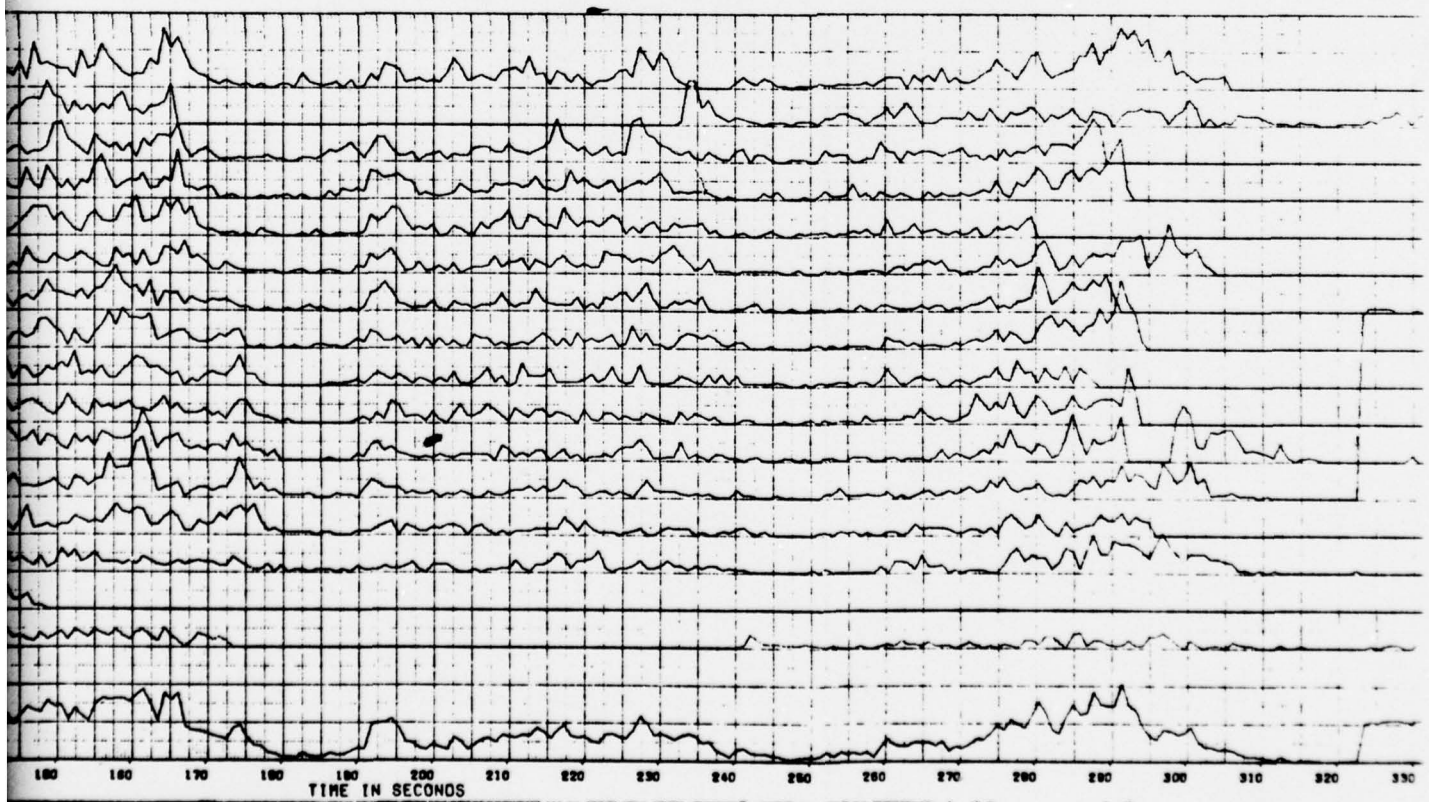
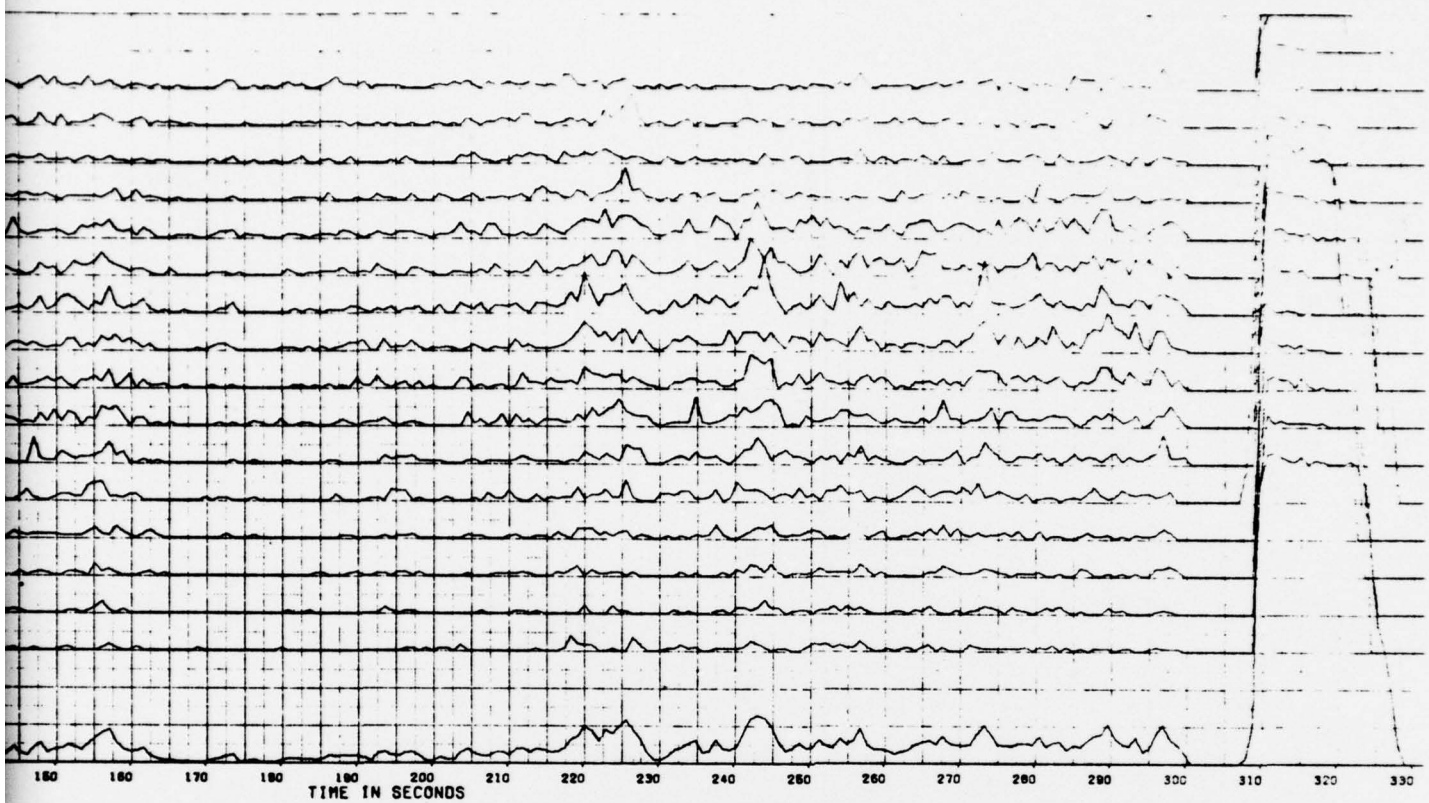
TIME 0605 -- SS = 5. ALT = 2.2 KFT. DOWN WIND



TAGSEA HIT COUNTS vs TIME-0606-SS=5,ALT=2.2KFT CROSS WIND

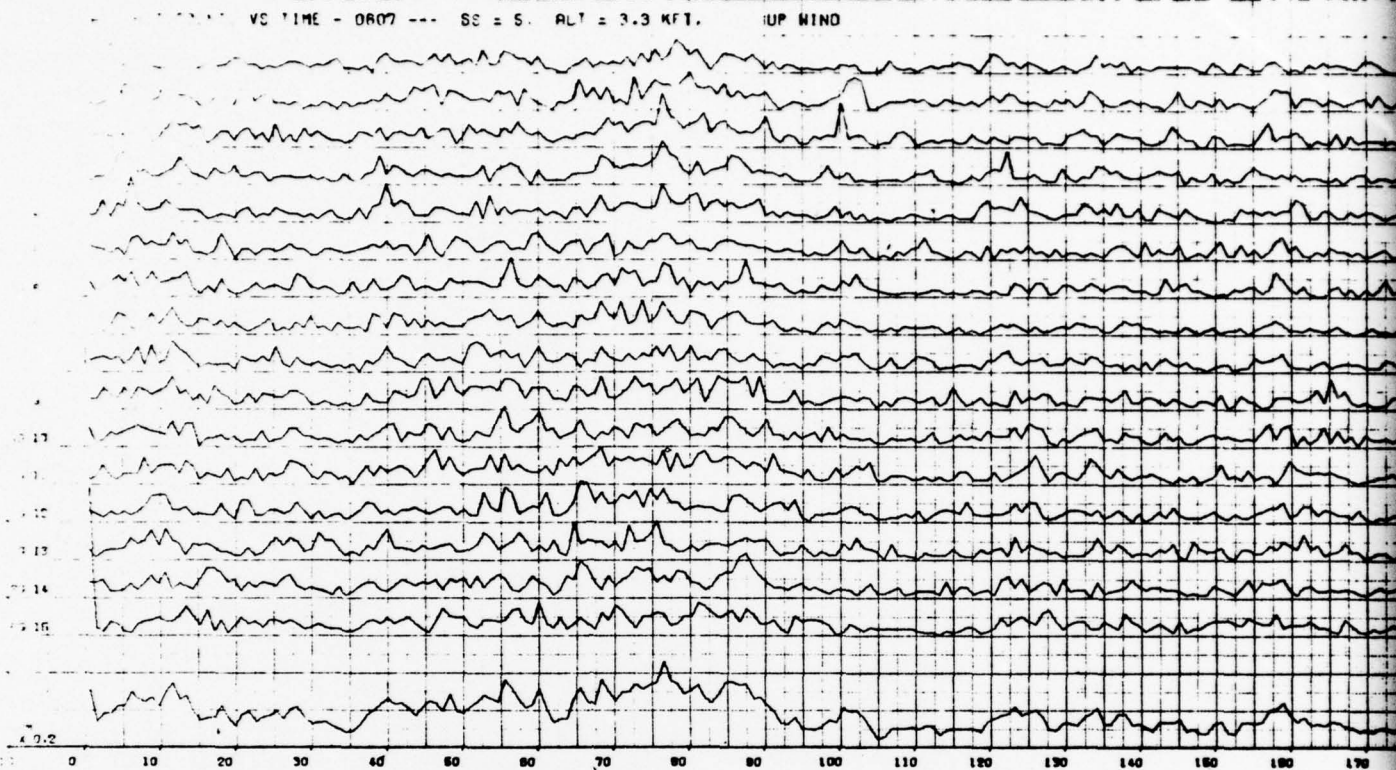
TIME 0606 -- SS = 5. ALT = 2.2 KFT. CROSS WIND





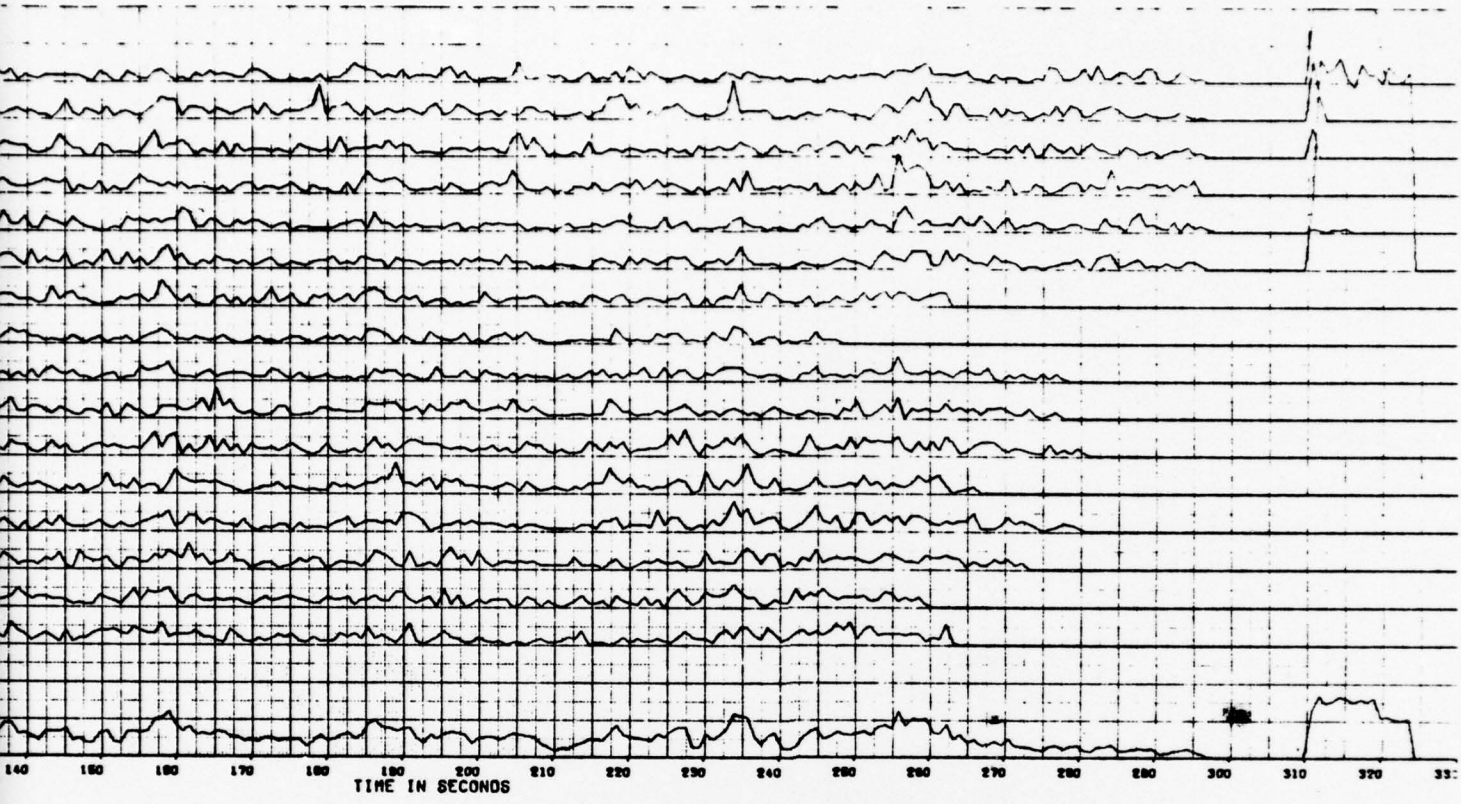
H-83/84

4GSEA HIT COUNTS vs TIME-0607-SS=5, ALT=3.3KFT UP WIND



TAGSEA HIT COUNTS vs TIME-0608-SS=5, ALT=3.3KFT DOWN WIND



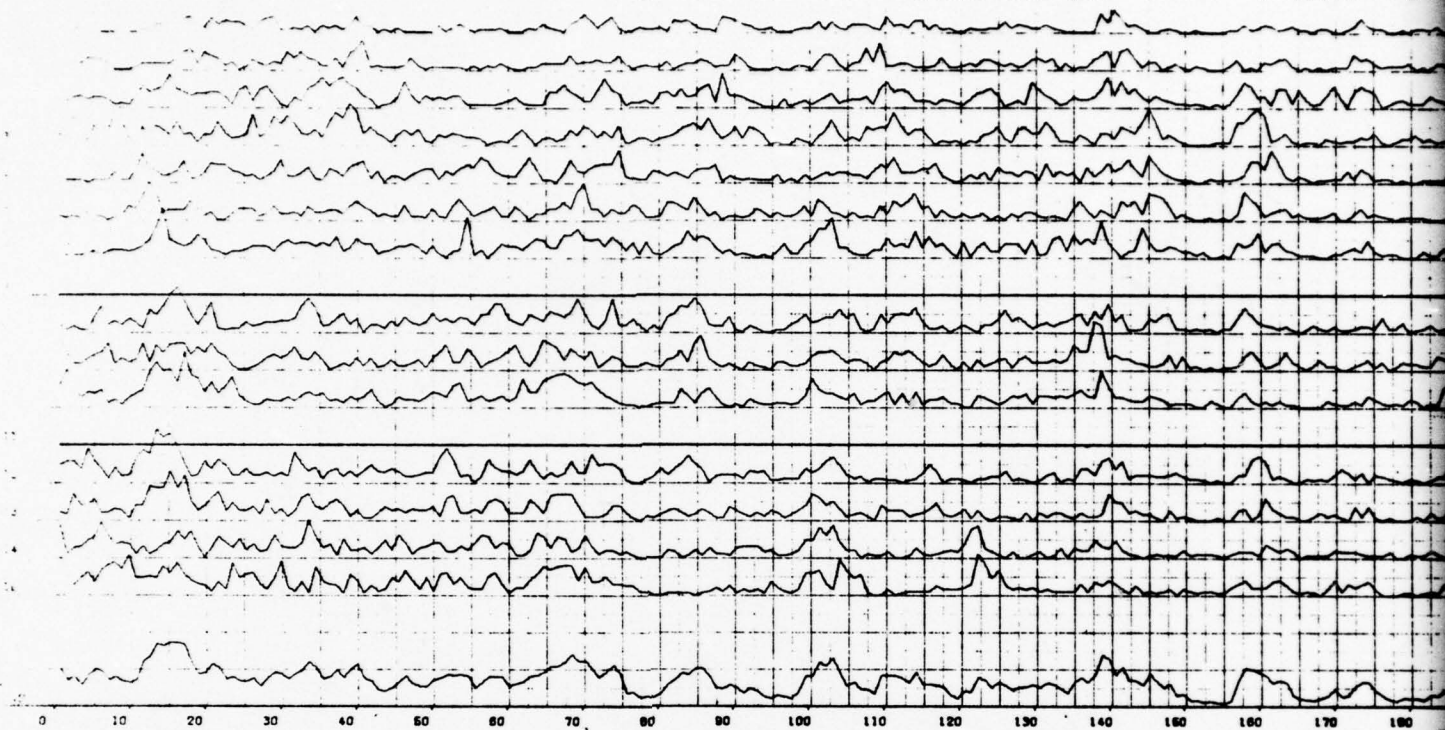


H-85/86

2

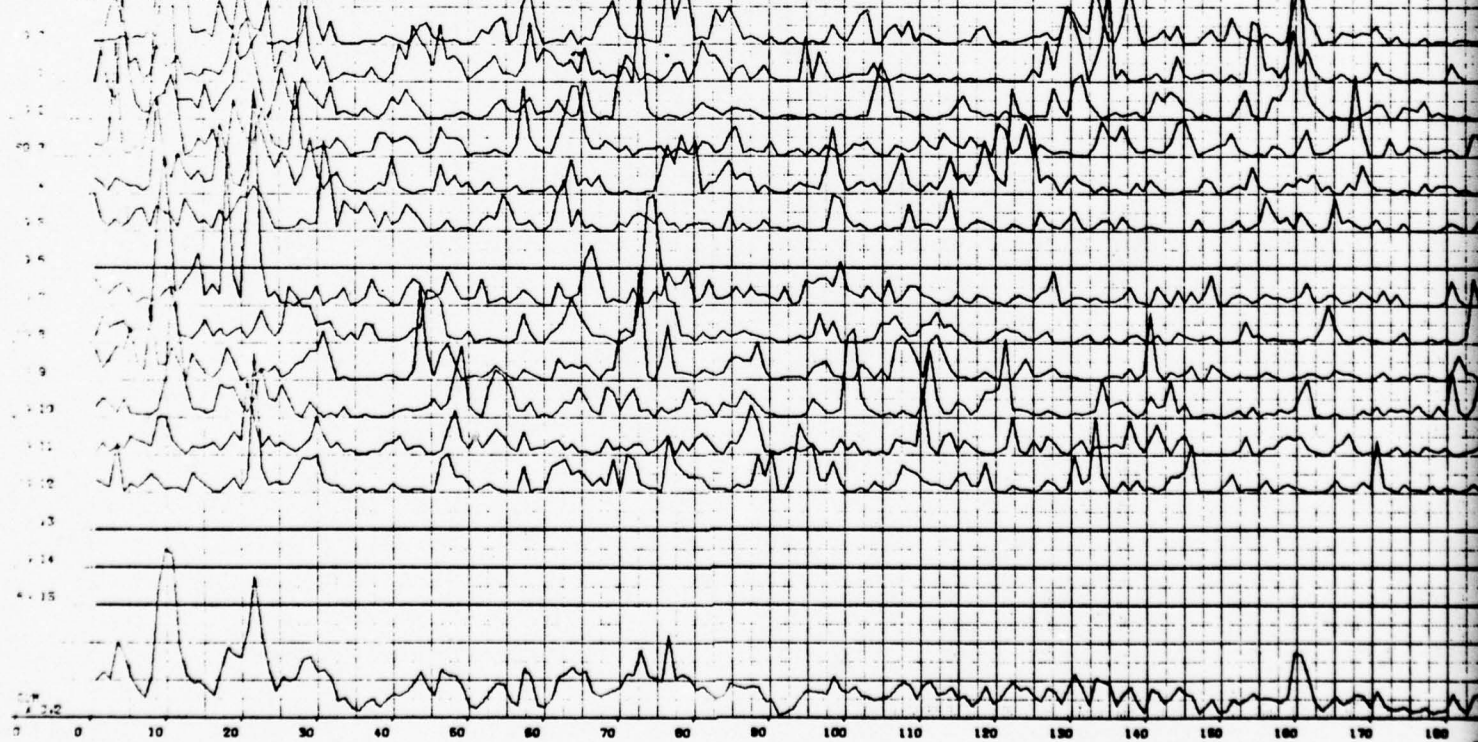
TAGSEA HIT COUNTS vs TIME-0609-SS=5,ALT=3.3KFT CROSS WIND

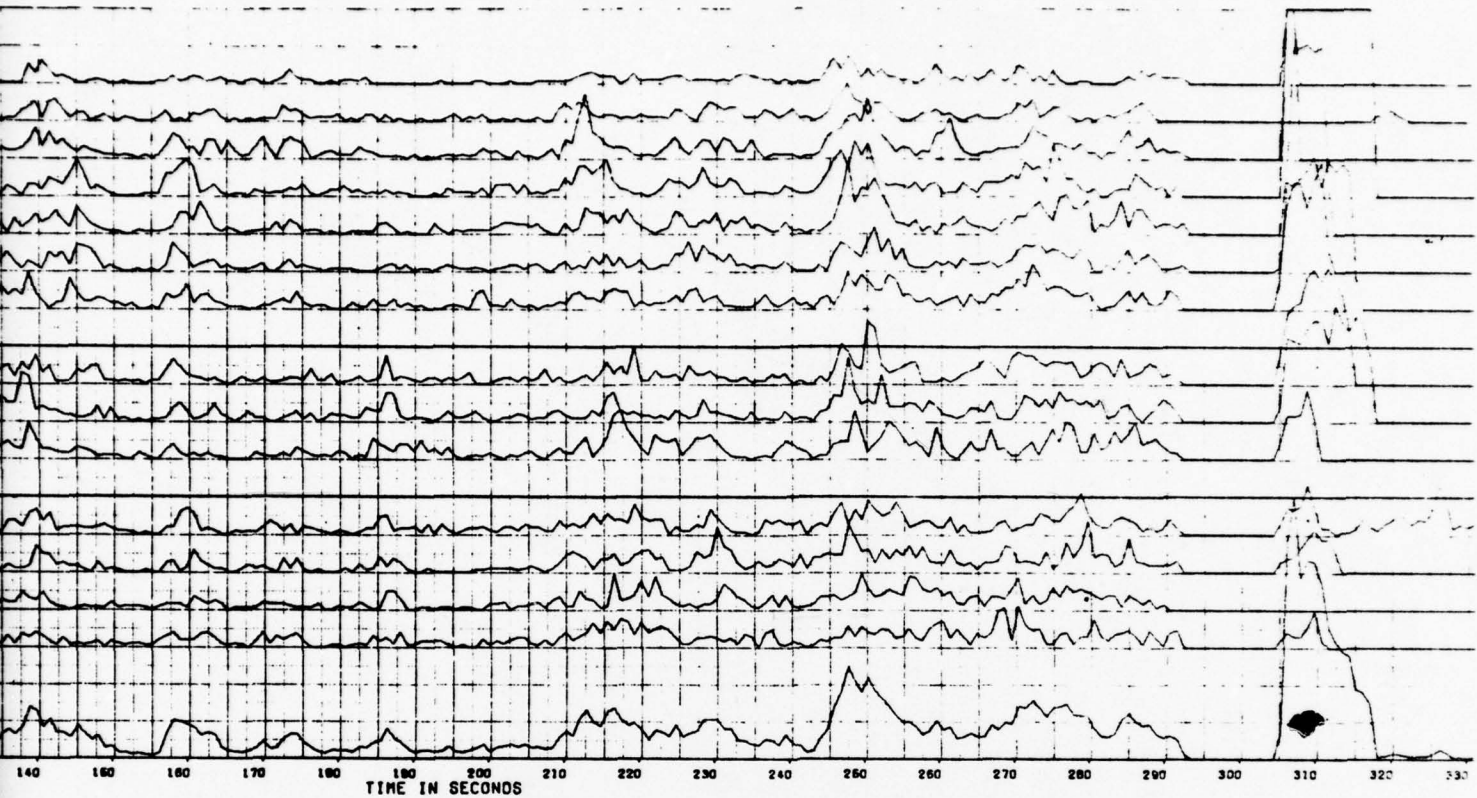
HIT COUNTS VS TIME - 0609 --- SS = 5. ALT = 3.3 KFT. CROSS WIND



TAGSEA HIT COUNTS vs TIME-0701-SS=5,ALT=1.1KFT UP WIND

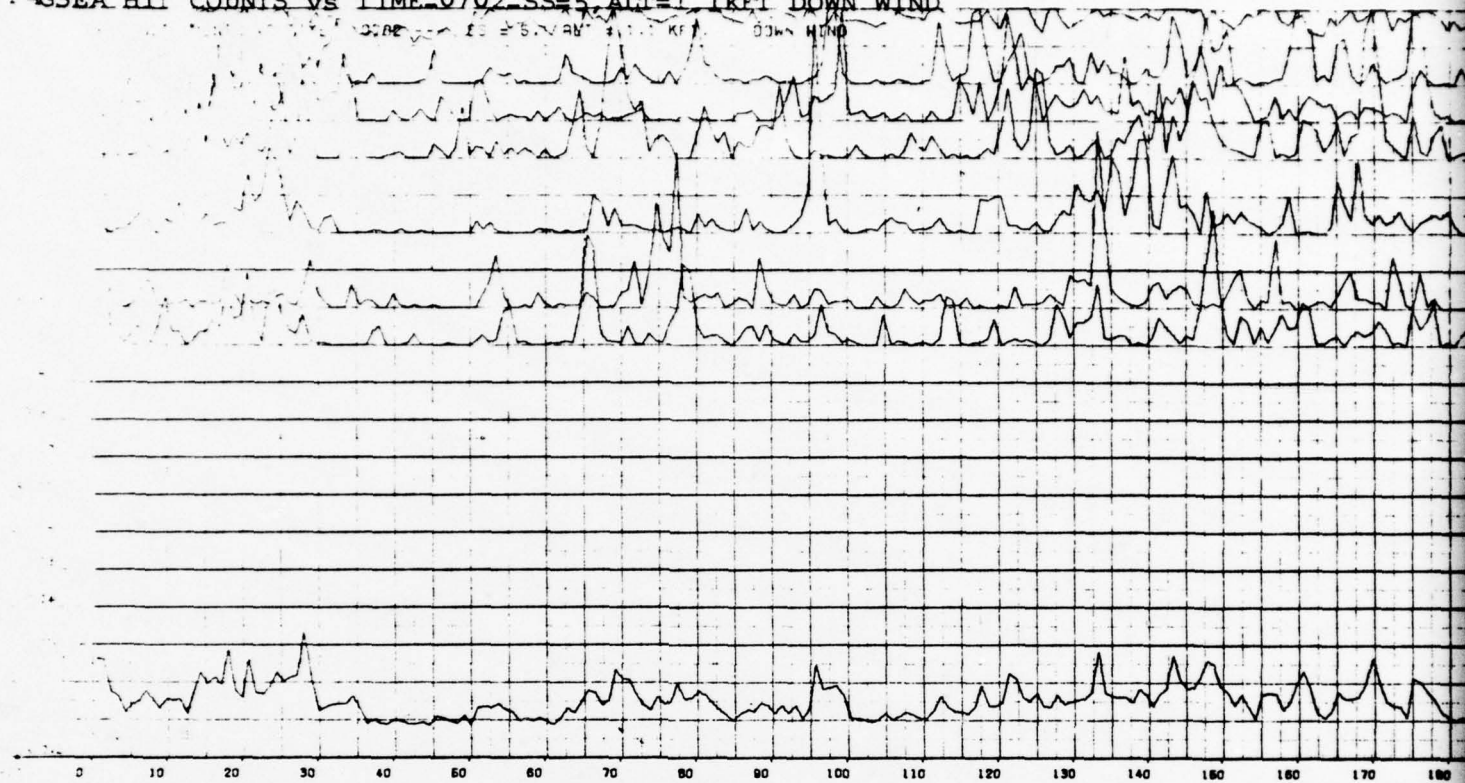
TAGSEA - HIT COUNTS VS TIME - 0701 --- SS = 5. ALT = 1.1 KFT. UP WIND





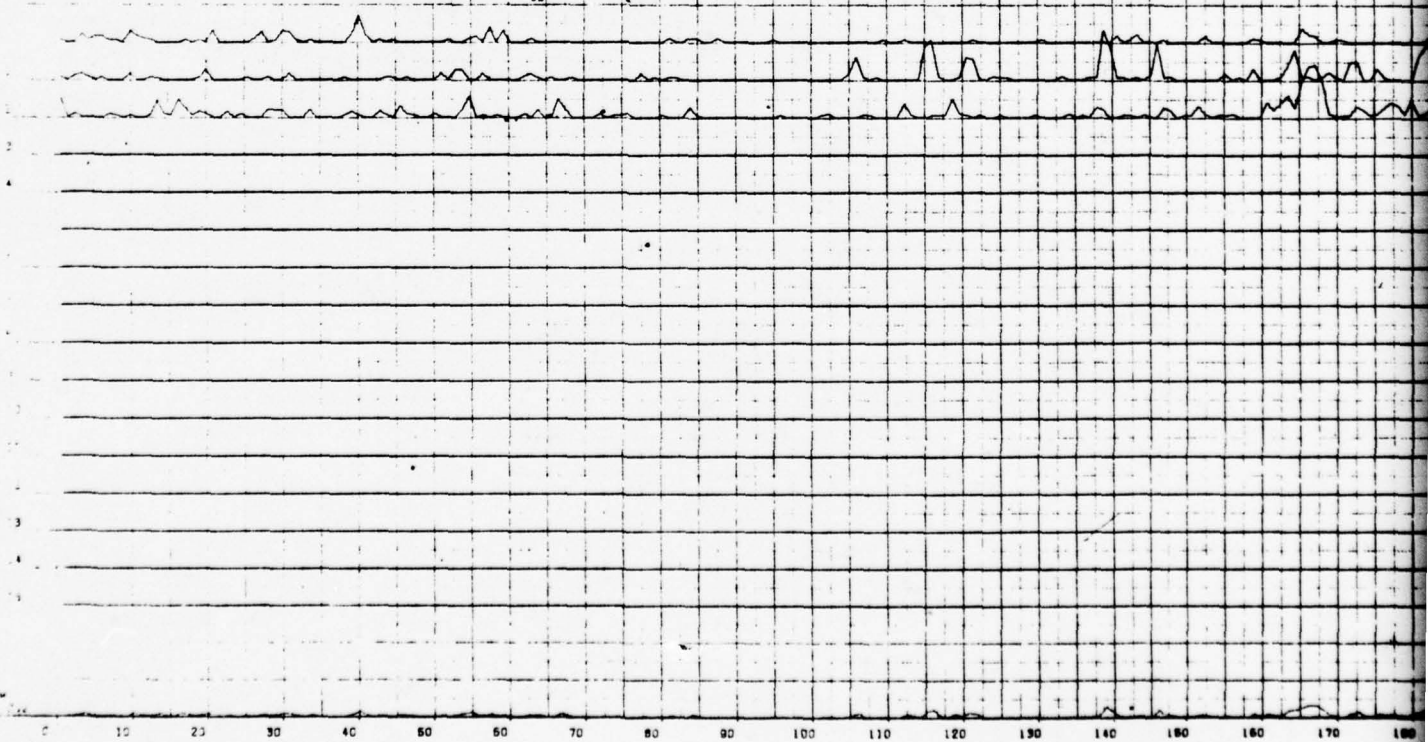
H-87/88

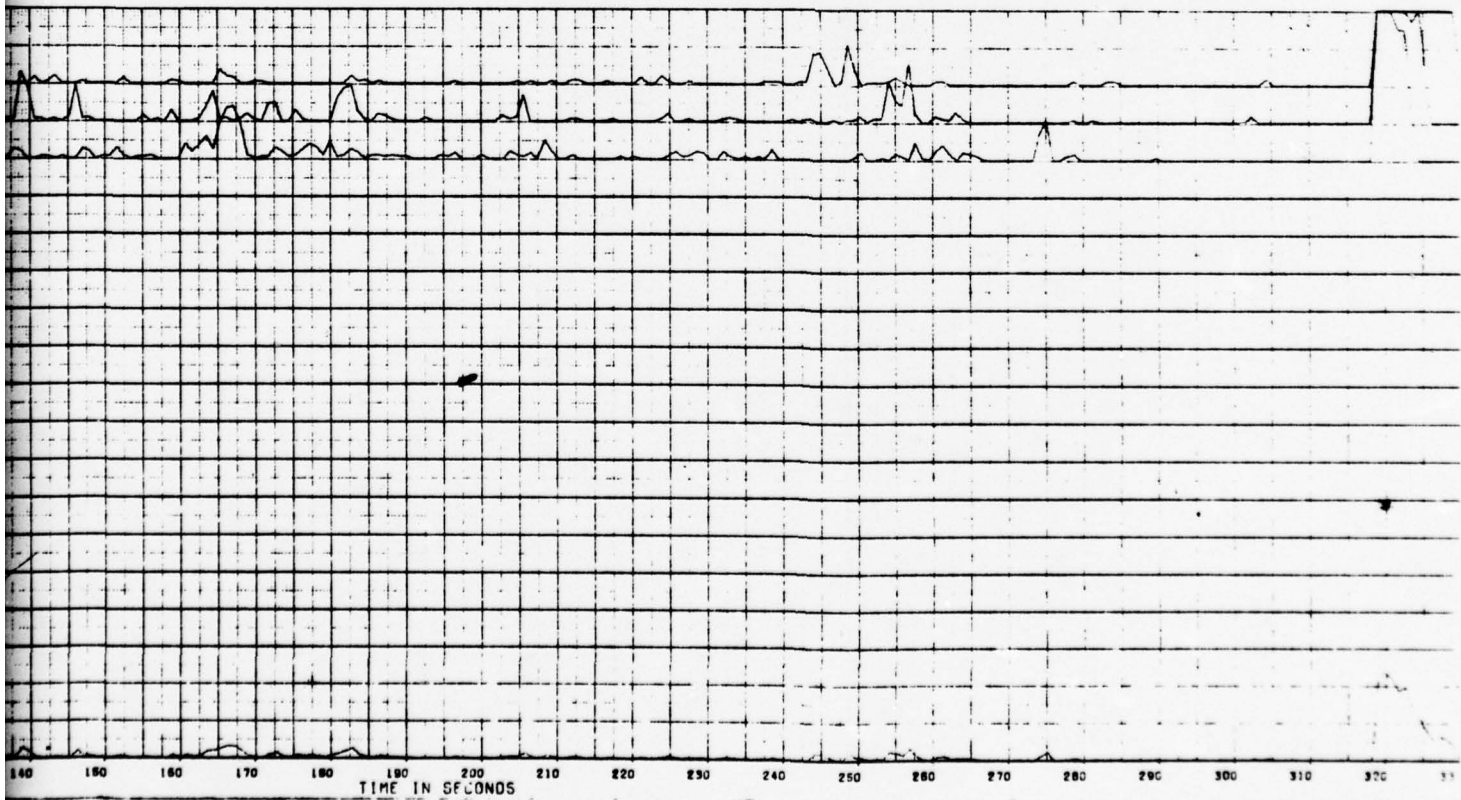
TAGSEA HIT COUNTS vs TIME-0702-SS=5,ALT=1.1KFT DOWN WIND



TAGSEA HIT COUNTS vs TIME-0703-SS=5,ALT=1.1KFT CROSS WIND

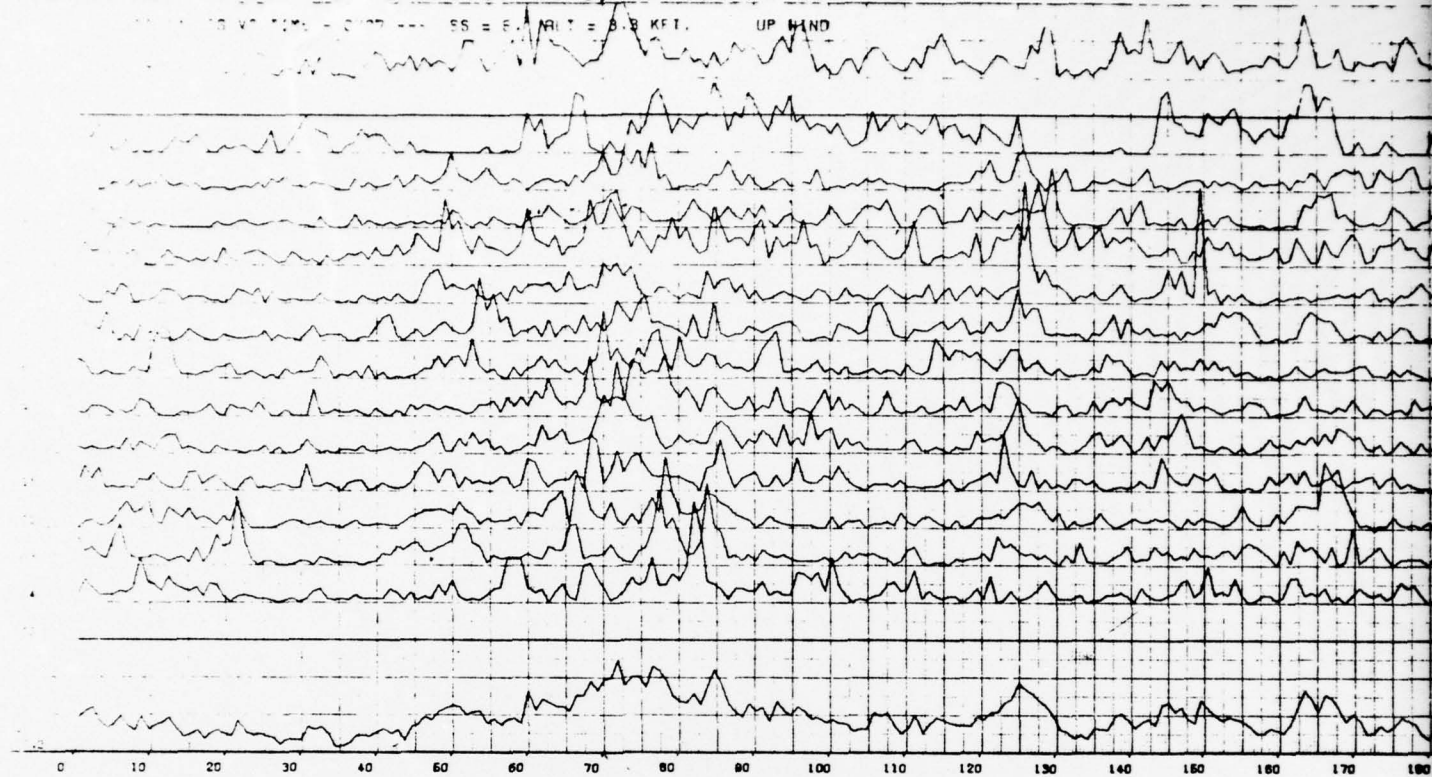
TAGSEA - HIT COUNTS VS TIME - 0703 --- SS = 5. ALT = 1.1 KFT. CROSS WIND



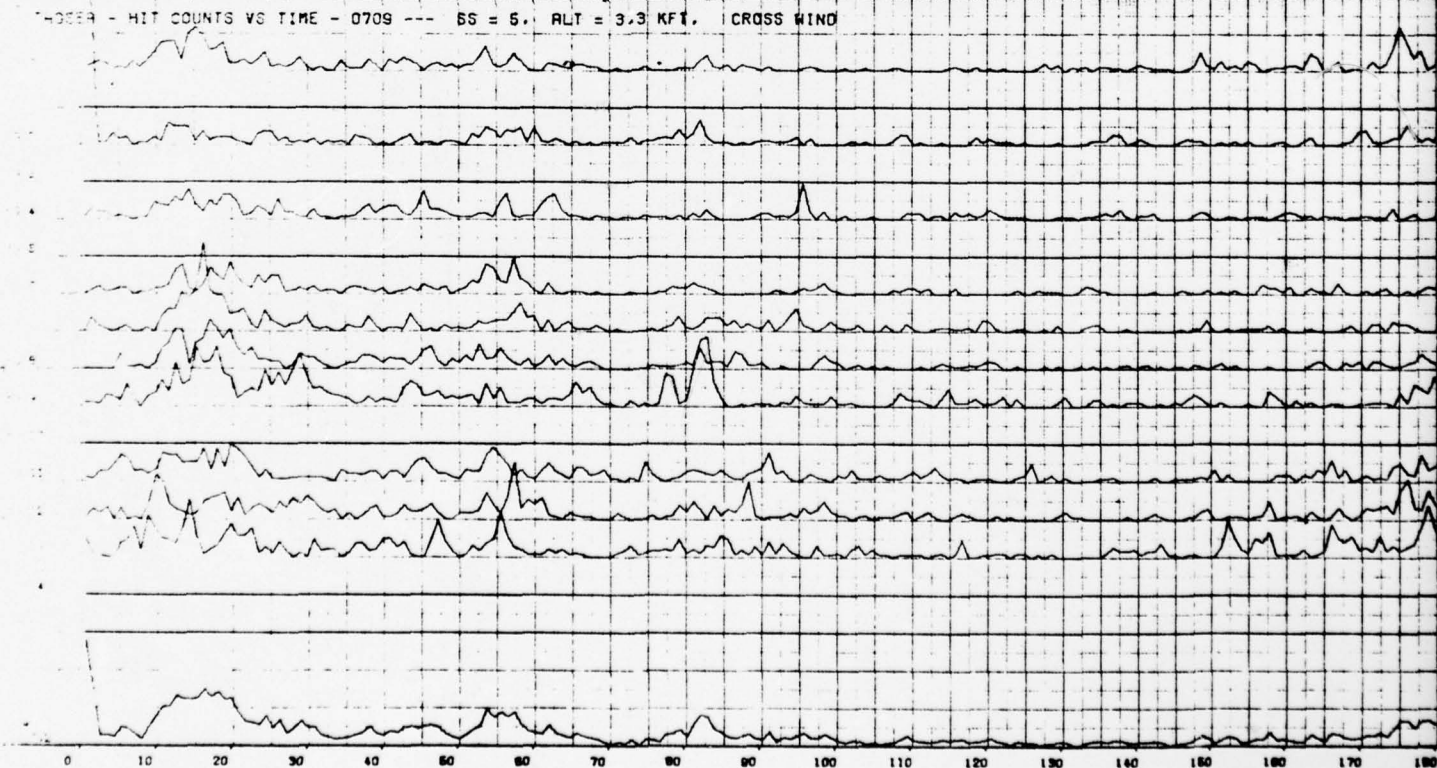


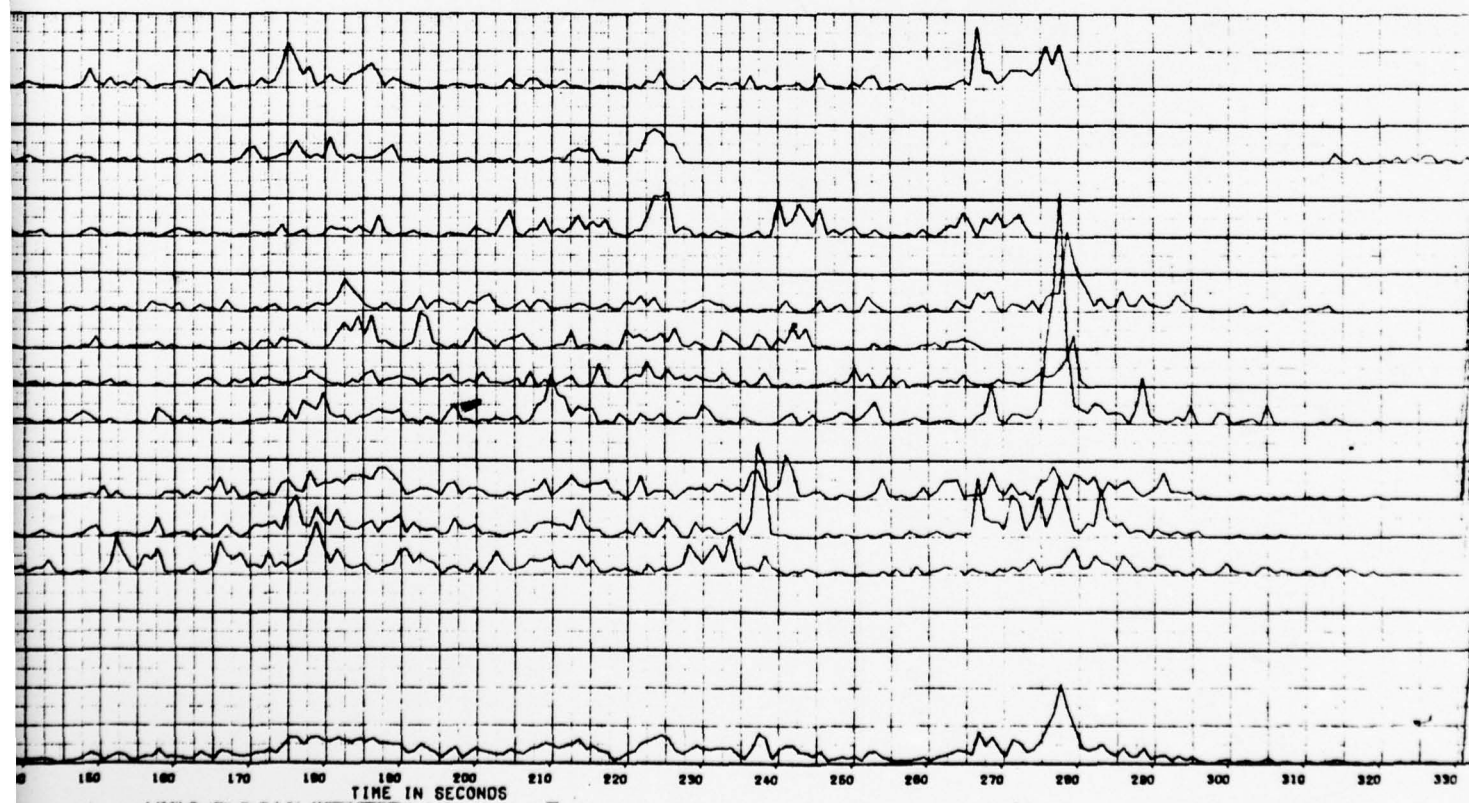
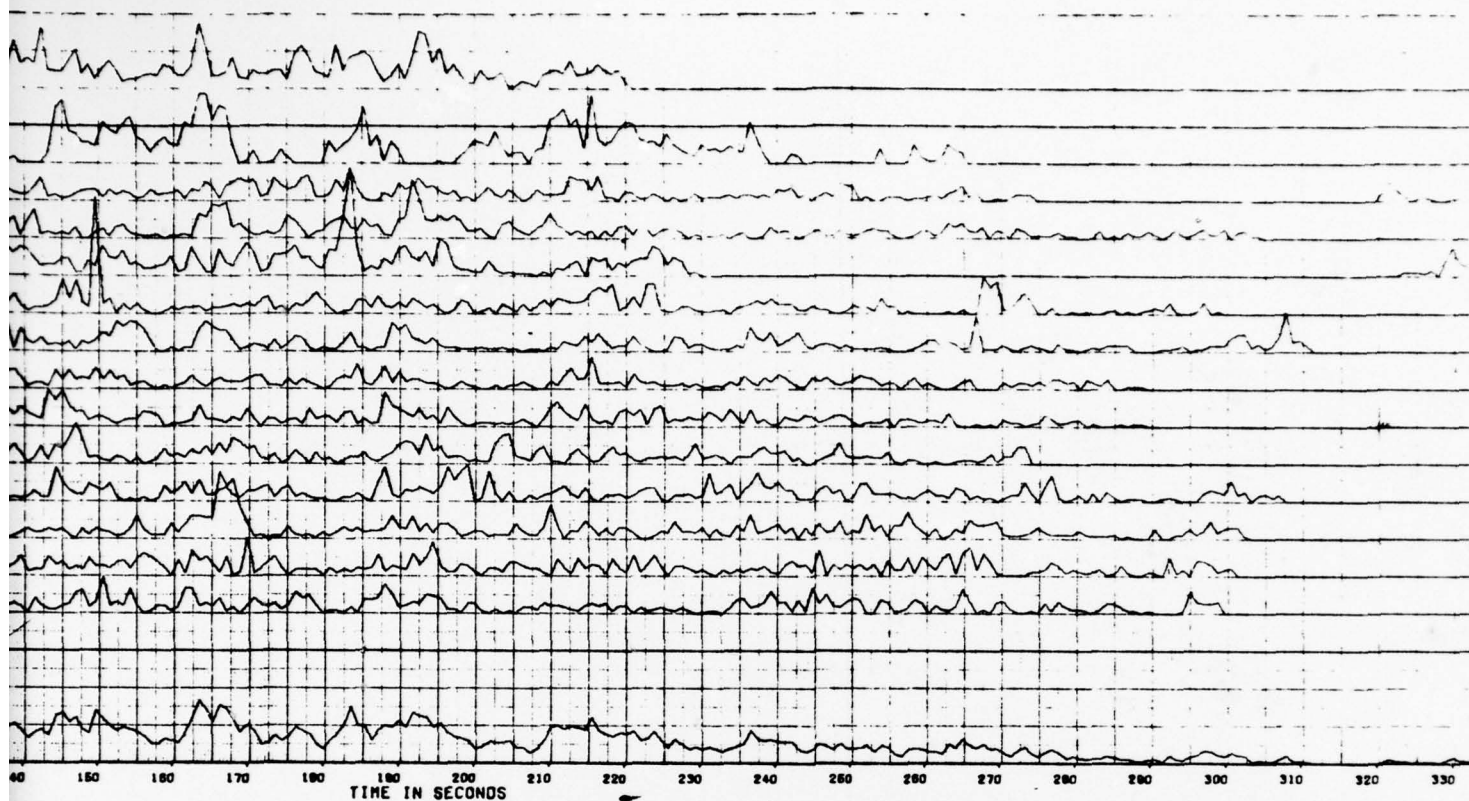
H-89/90

TAGSEA HIT COUNTS vs TIME-0707-SS=5,ALT=3.3KFT UP WIND



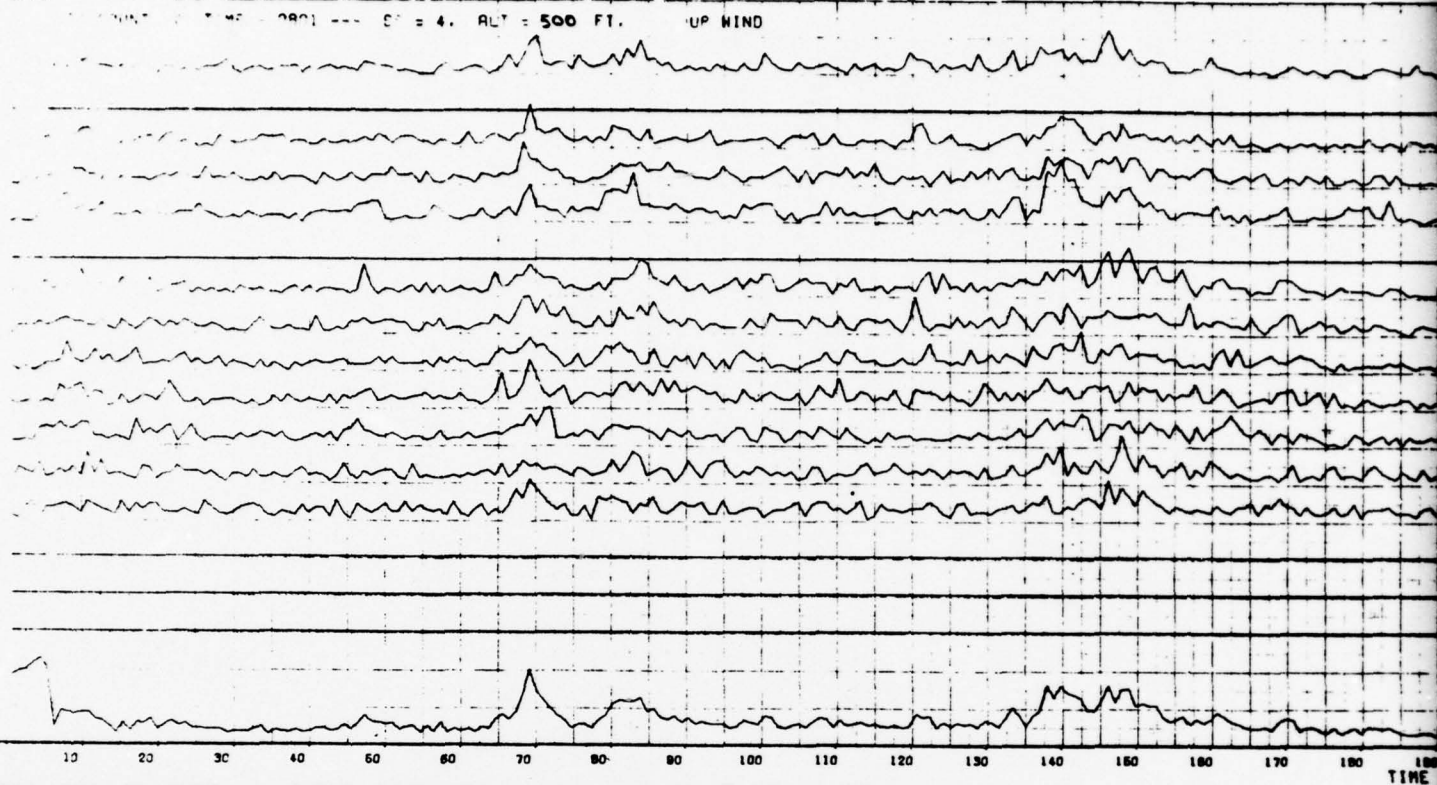
TAGSEA HIT COUNTS vs TIME-0709-SS=5,ALT=3.3KFT CROSS WIND



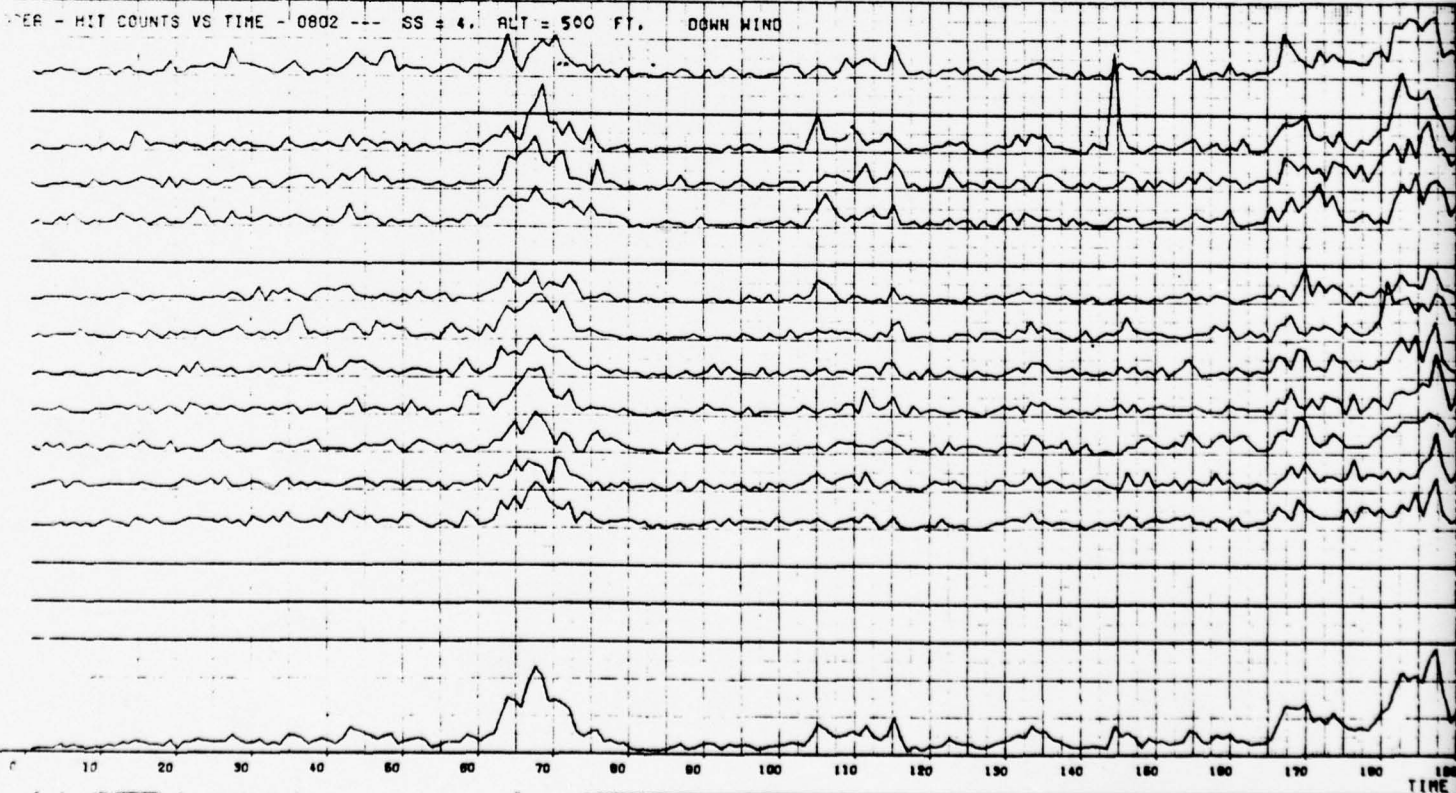


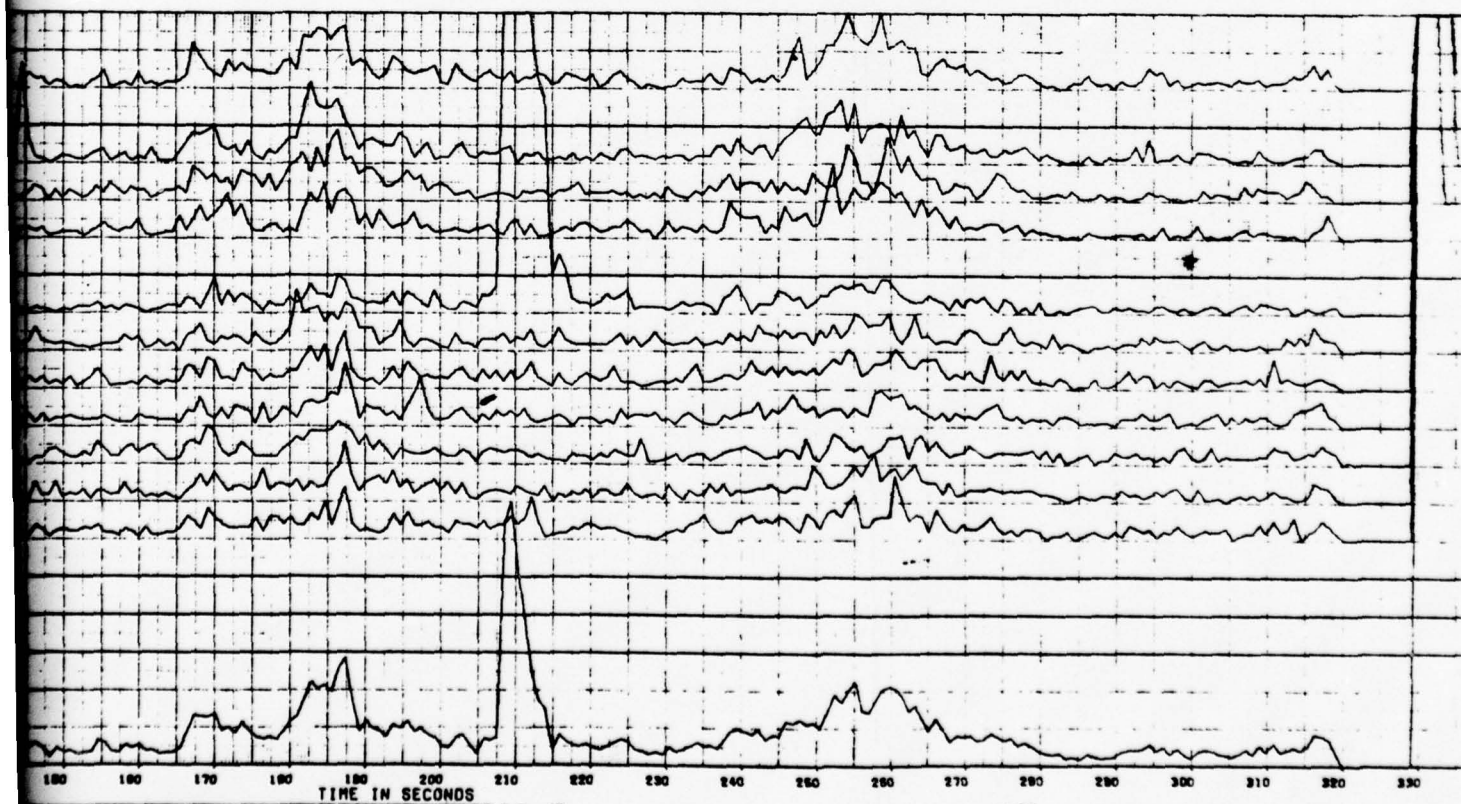
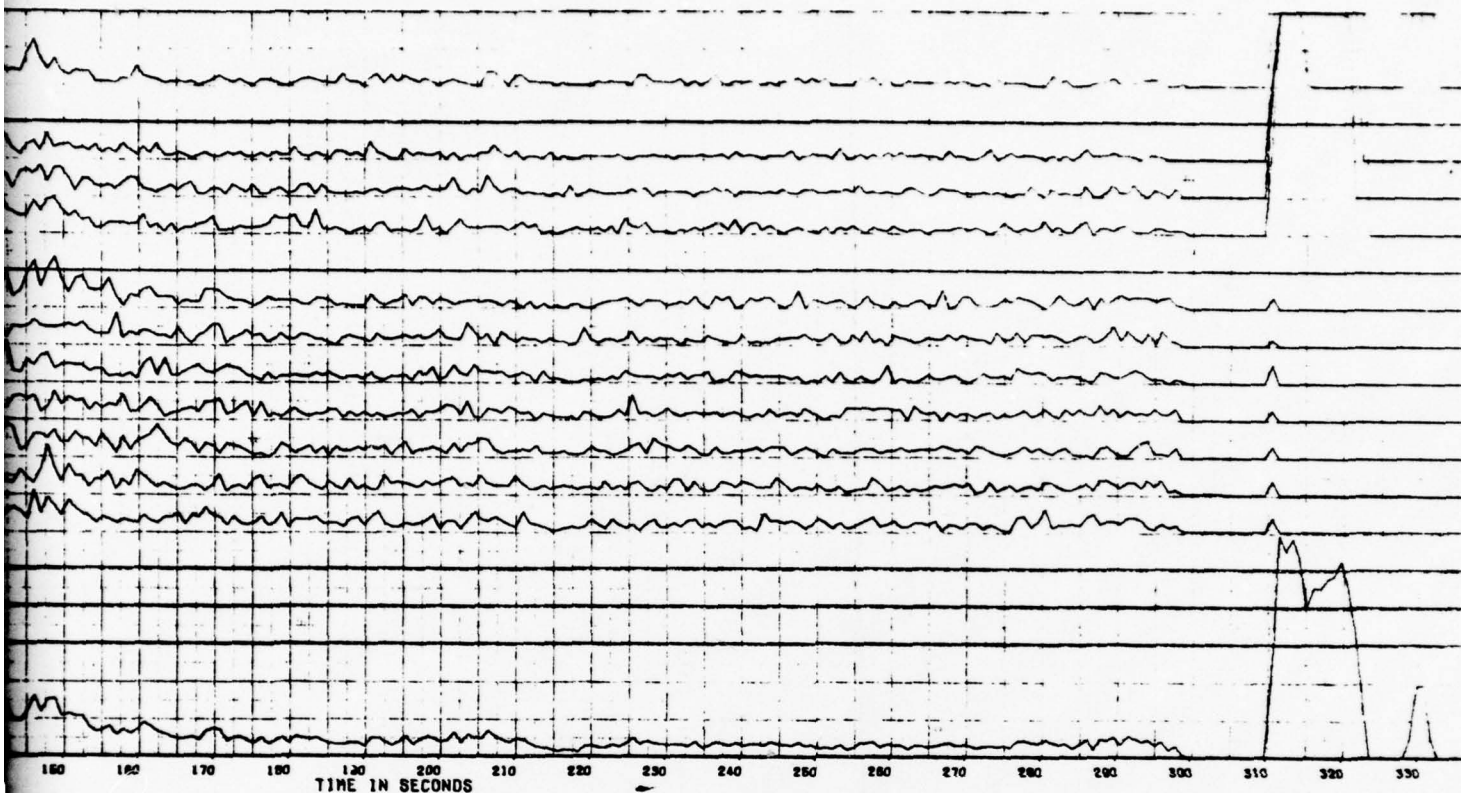
H-91/92

TAGSEA HIT COUNTS vs TIME-0801-SS=4,ALT=500 FT UP WIND



TAGSEA HIT COUNTS vs TIME-0802-SS=4,ALT=500 FT DOWN WIND

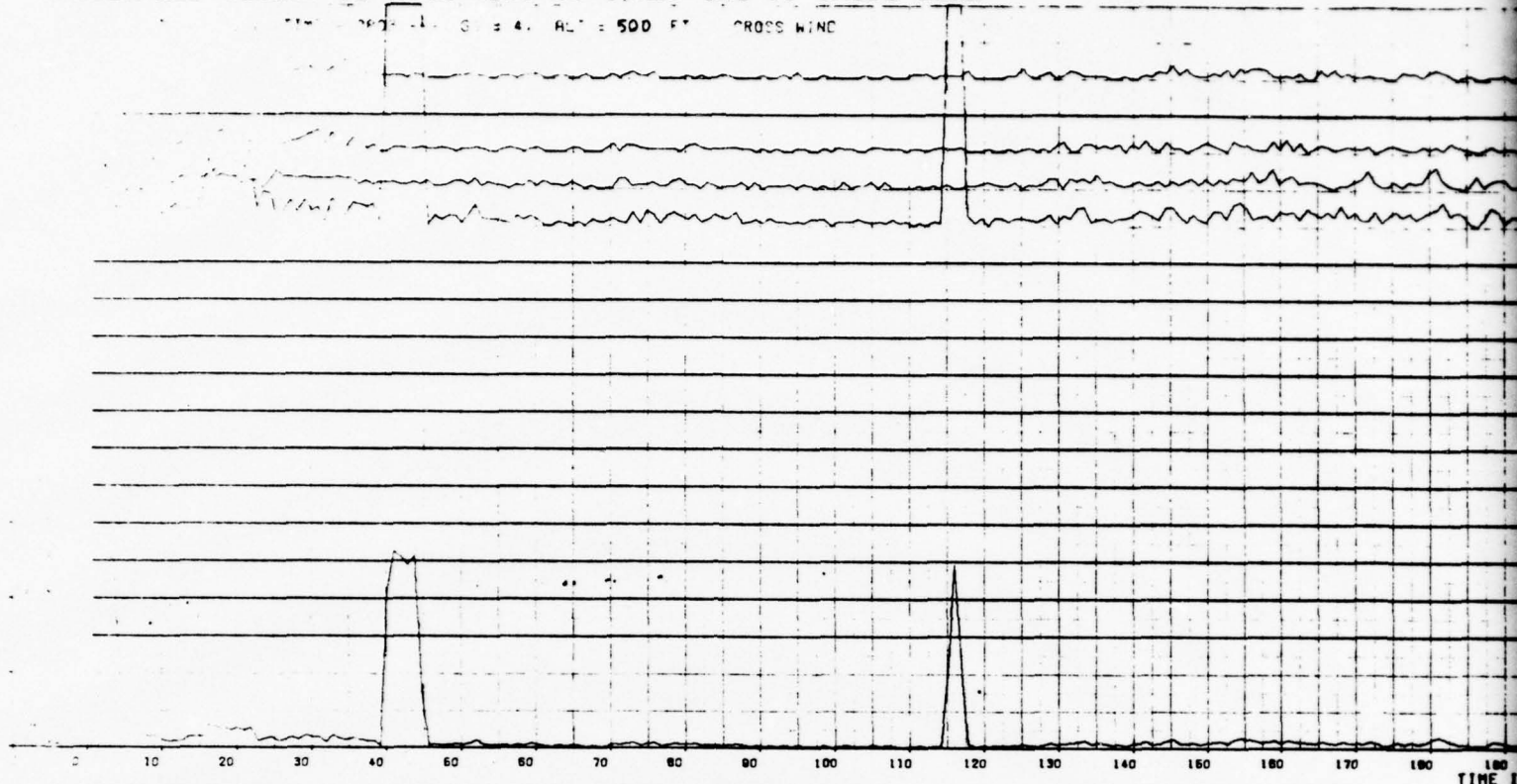




H-93/94

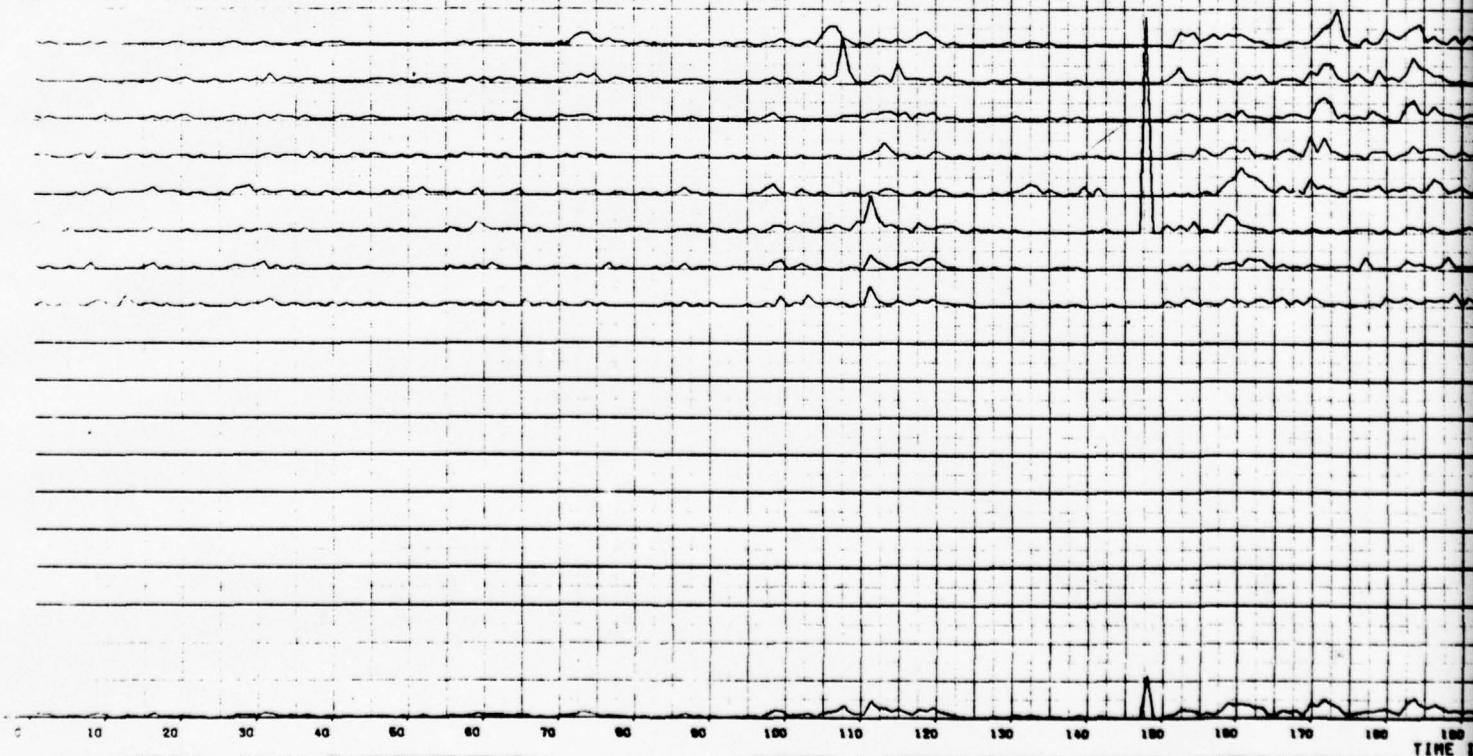
TAGSEA HIT COUNTS vs TIME-0803-SS=4,ALT=500 FT CROSS WIND

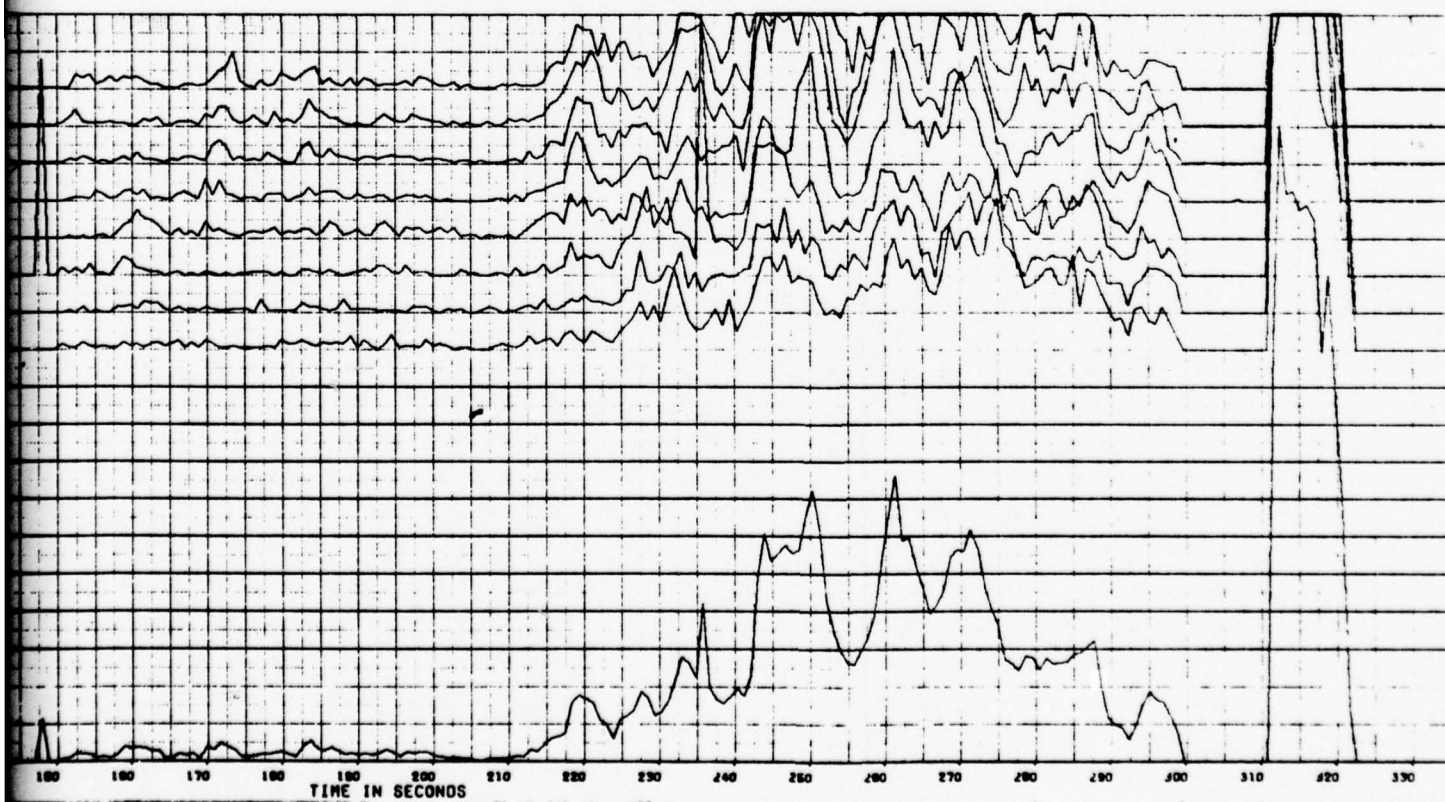
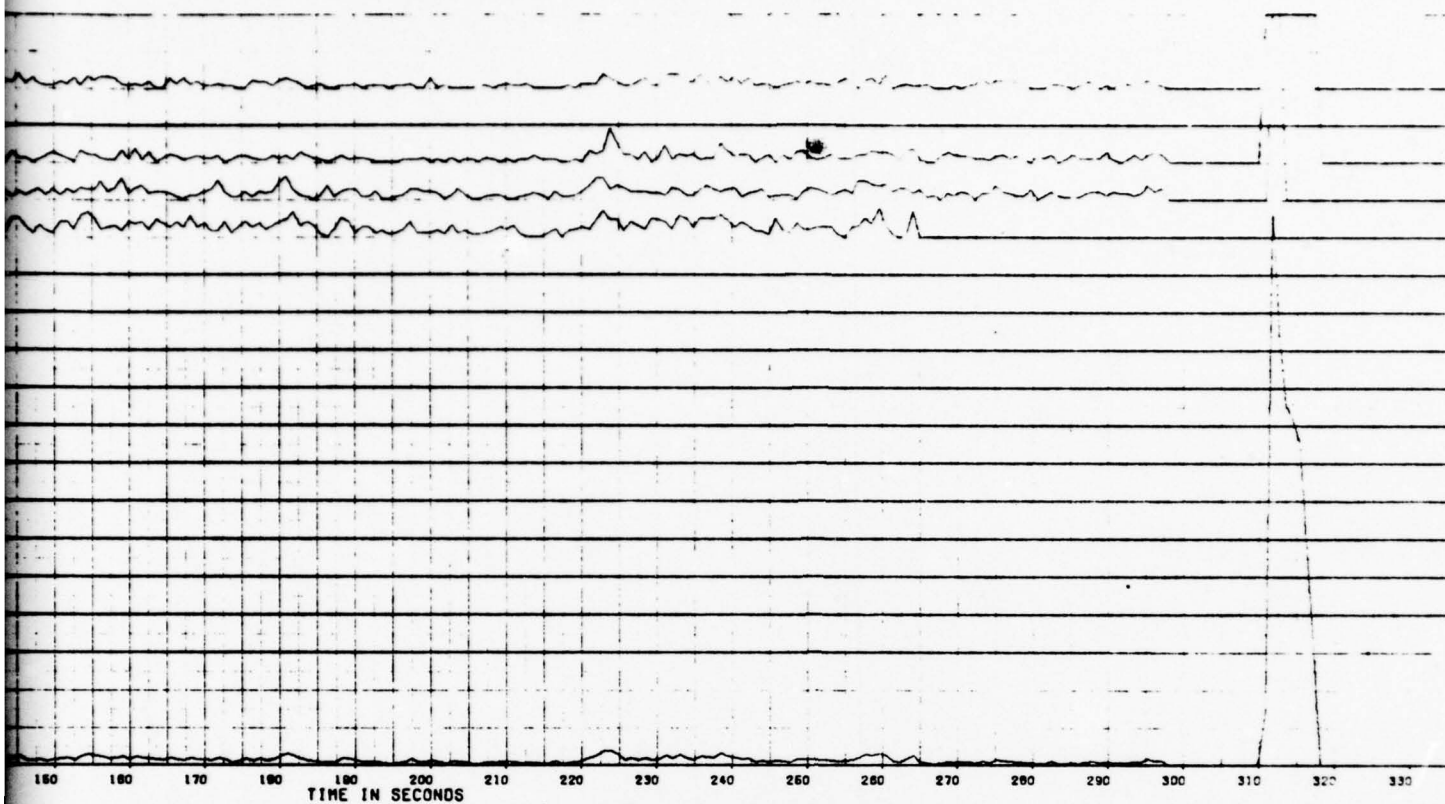
TIME 0803 SS = 4 ALT = 500 FT CROSS WIND



TAGSEA HIT COUNTS vs TIME-1104-SS=1,ALT=2.2KFT UP WIND

TIME 1104 SS = 1 ALT = 2.2 KFT UP WIND

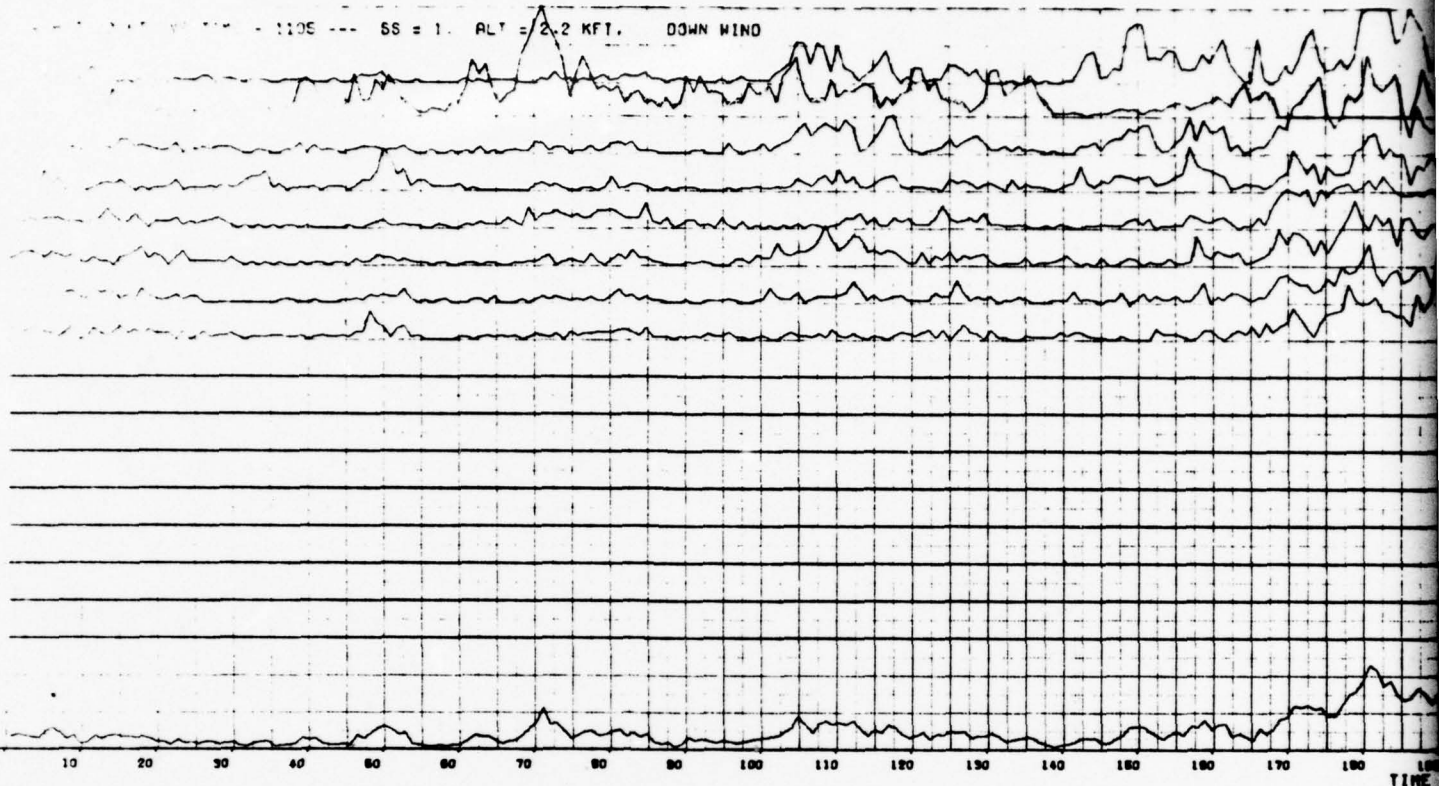




H-95/96

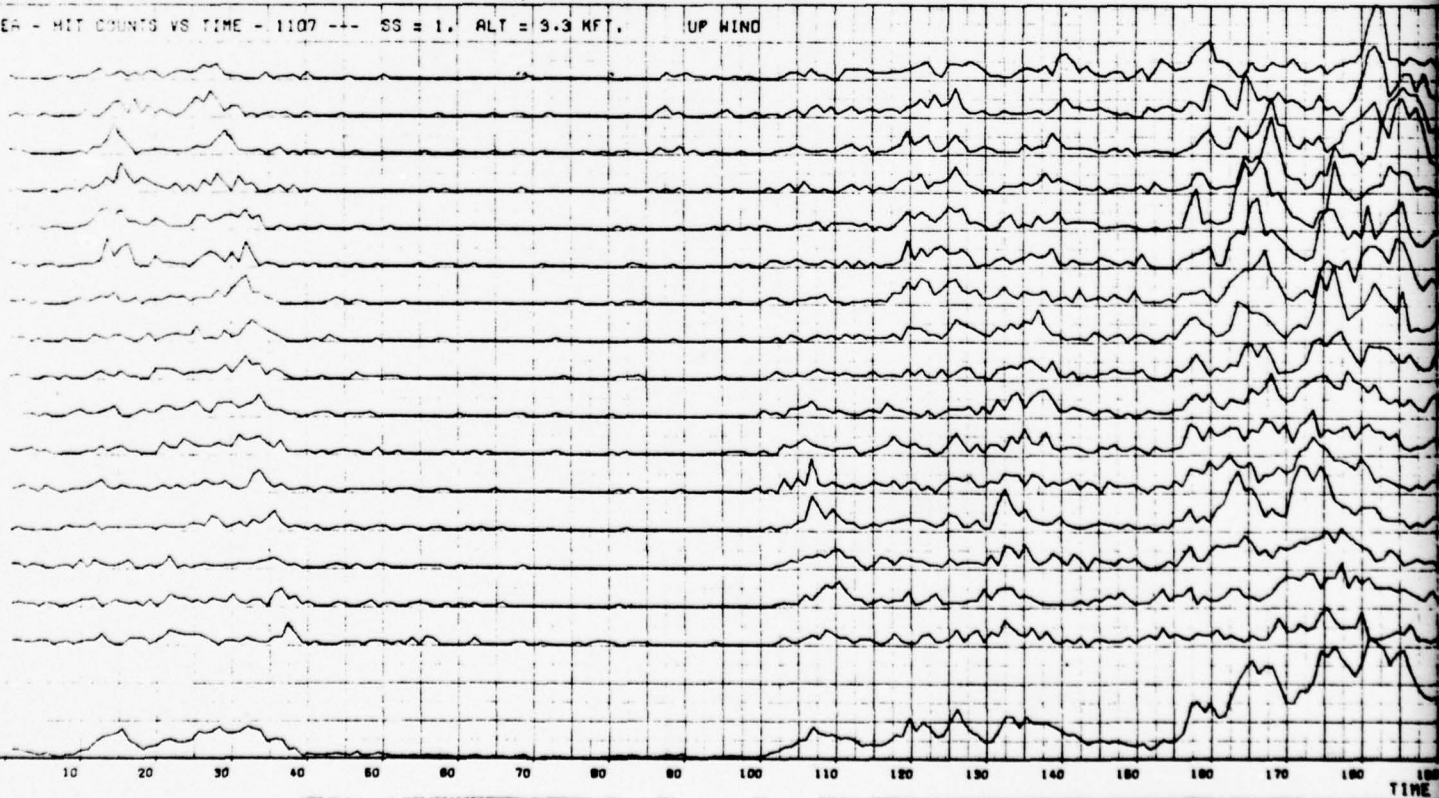
SEA HIT COUNTS vs TIME-1105-SS=1,ALT=2.2KFT DOWN WIND

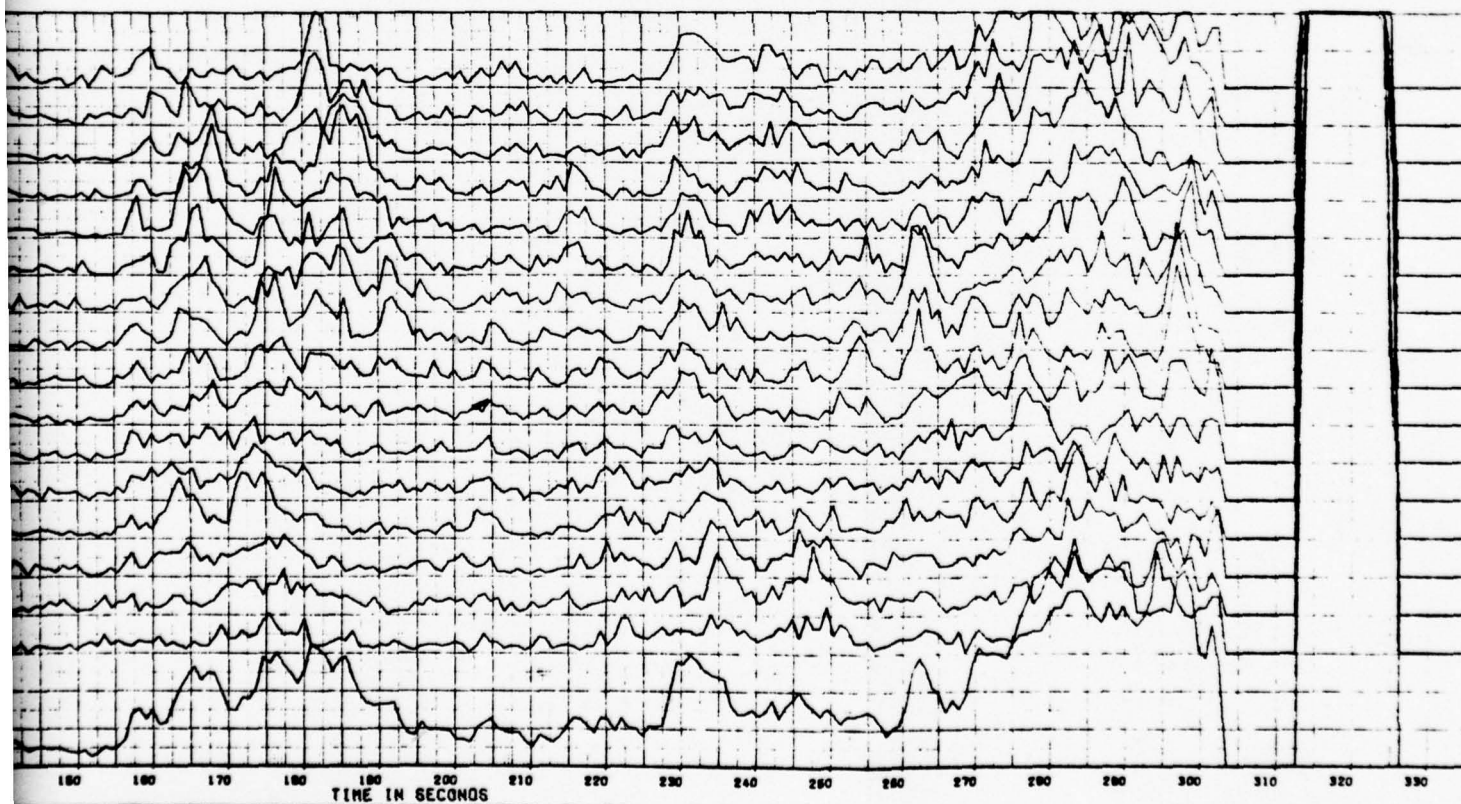
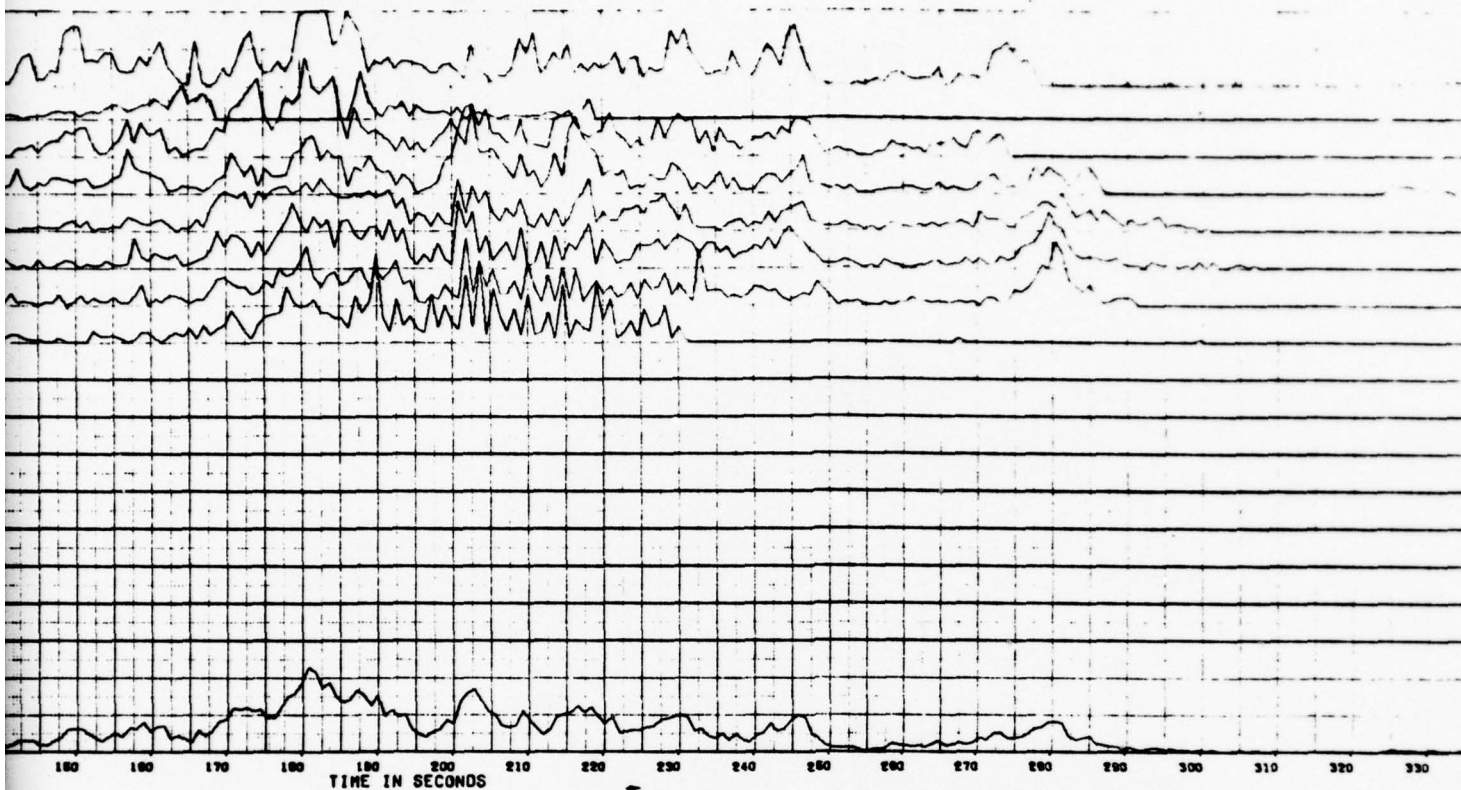
SEA - HIT COUNTS VS TIME - 1105 --- SS = 1. ALT = 2.2 KFT. DOWN WIND



SEA HIT COUNTS vs TIME-1107-SS=1,ALT=3.3KFT UP WIND

SEA - HIT COUNTS VS TIME - 1107 --- SS = 1. ALT = 3.3 KFT. UP WIND

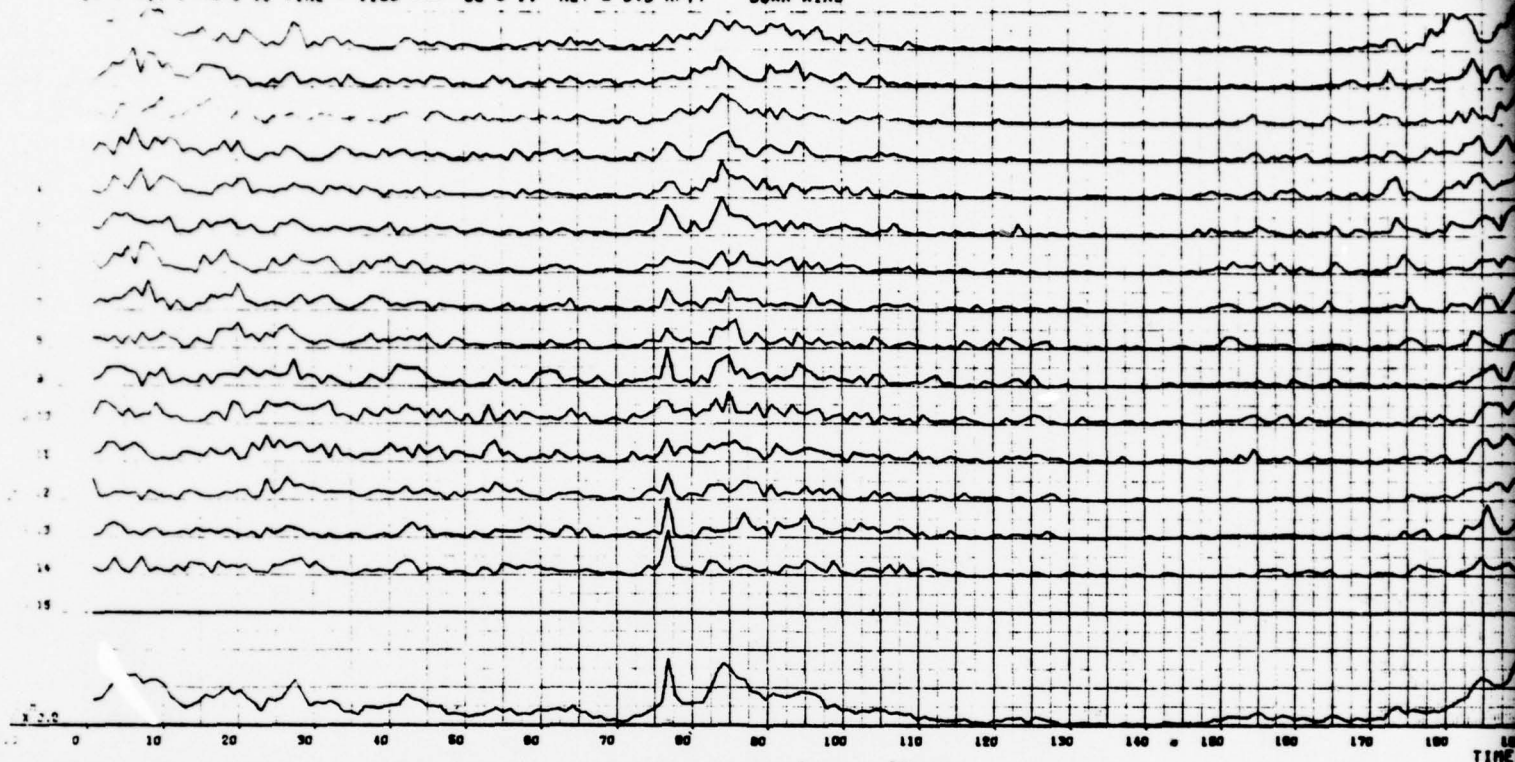




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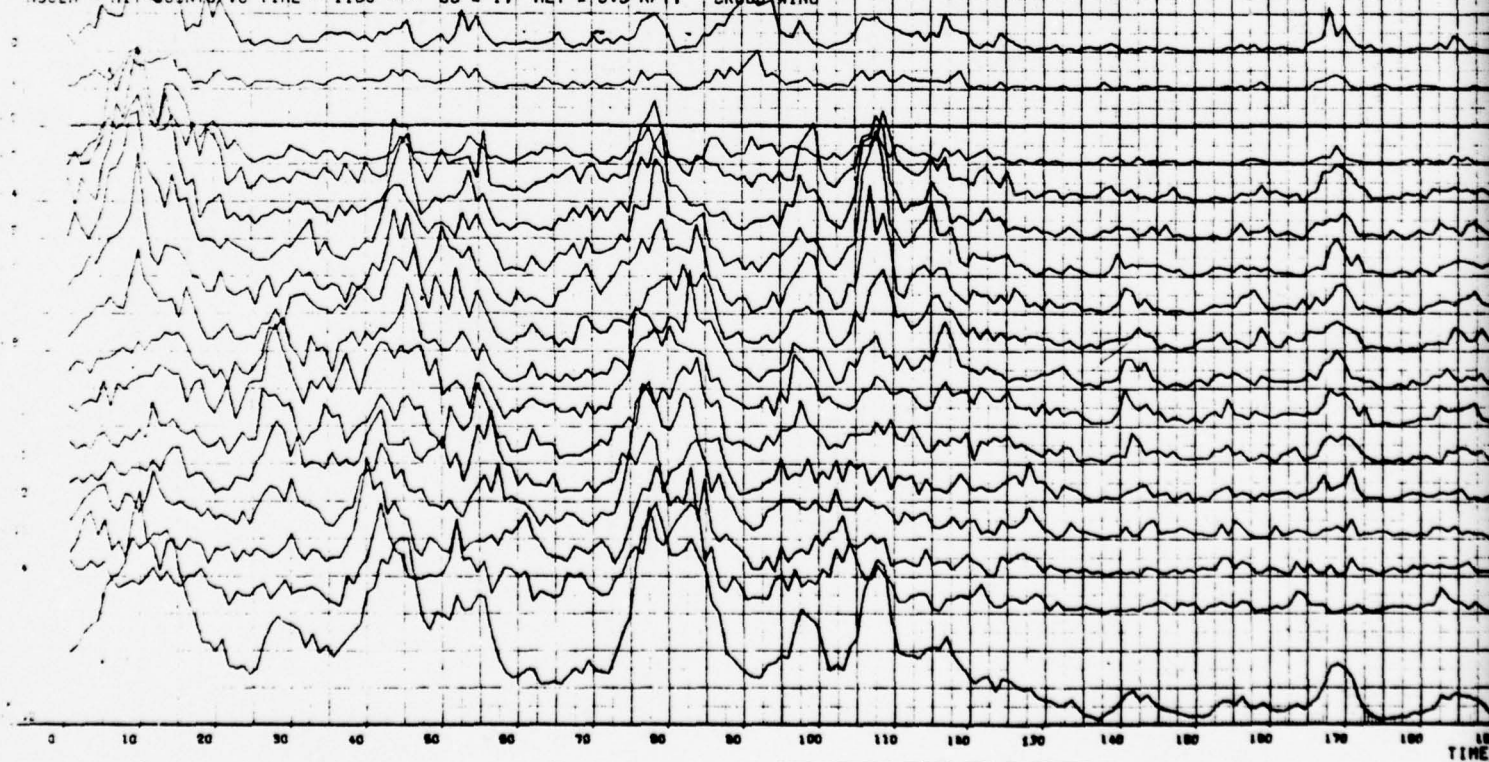
TAGSEA HIT COUNTS vs TIME-1108-SS=1,ALT=3.3KFT DOWN WIND

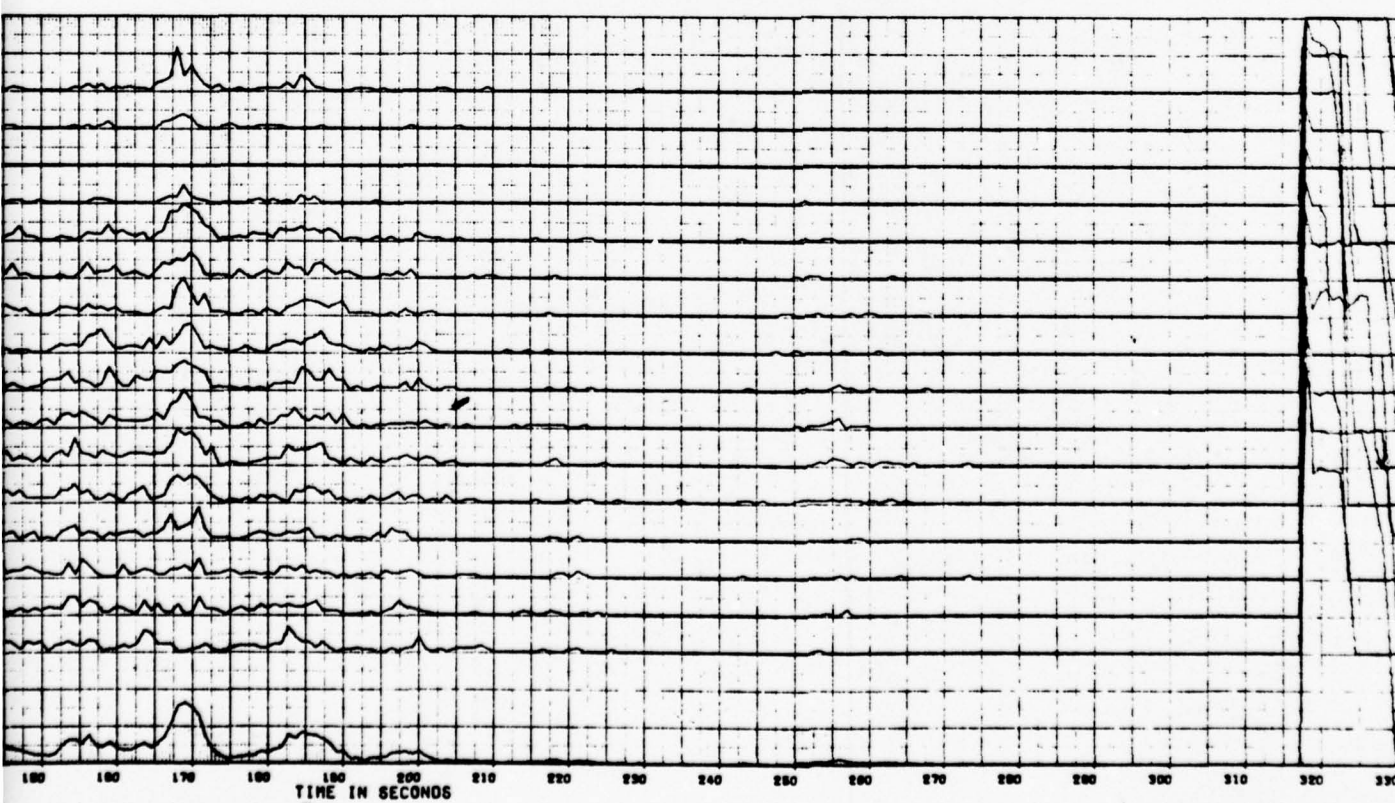
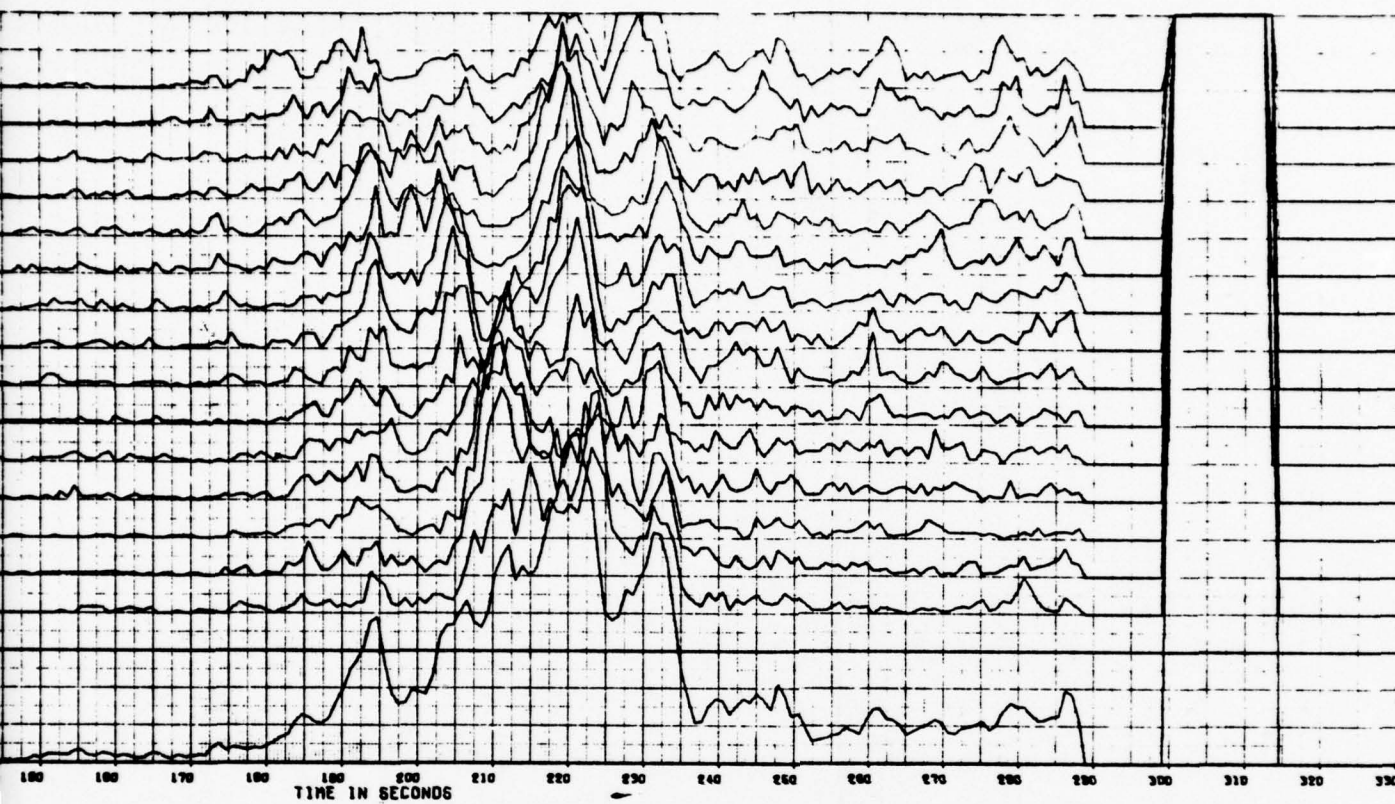
HIT COUNTS VS TIME - 1108 --- SS = 1. ALT = 3.3 KFT. DOWN WIND



TAGSEA HIT COUNTS vs TIME-1109-SS=1,ALT=3.3KFT CROSS WIND

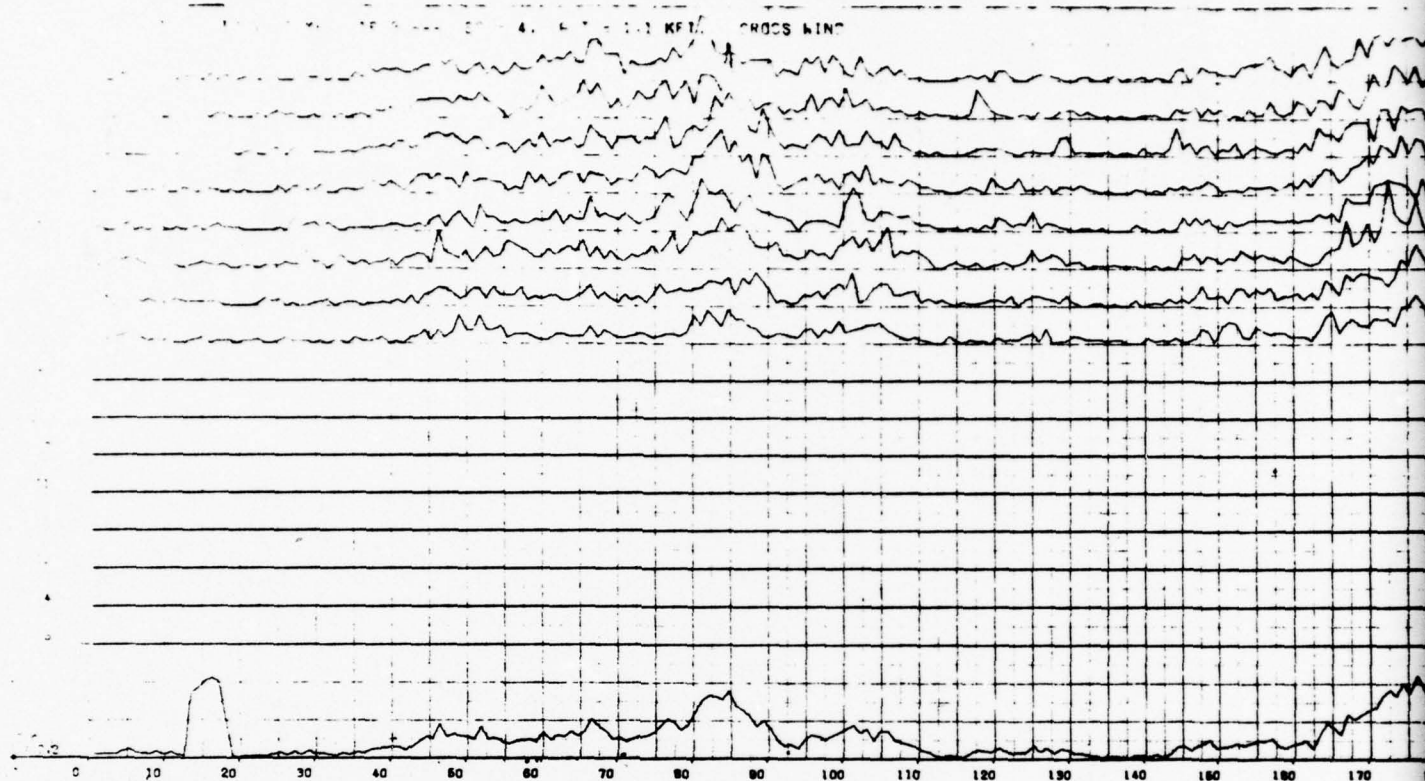
TAGSEA - HIT COUNTS VS TIME - 1109 --- SS = 1. ALT = 3.3 KFT. CROSS WIND



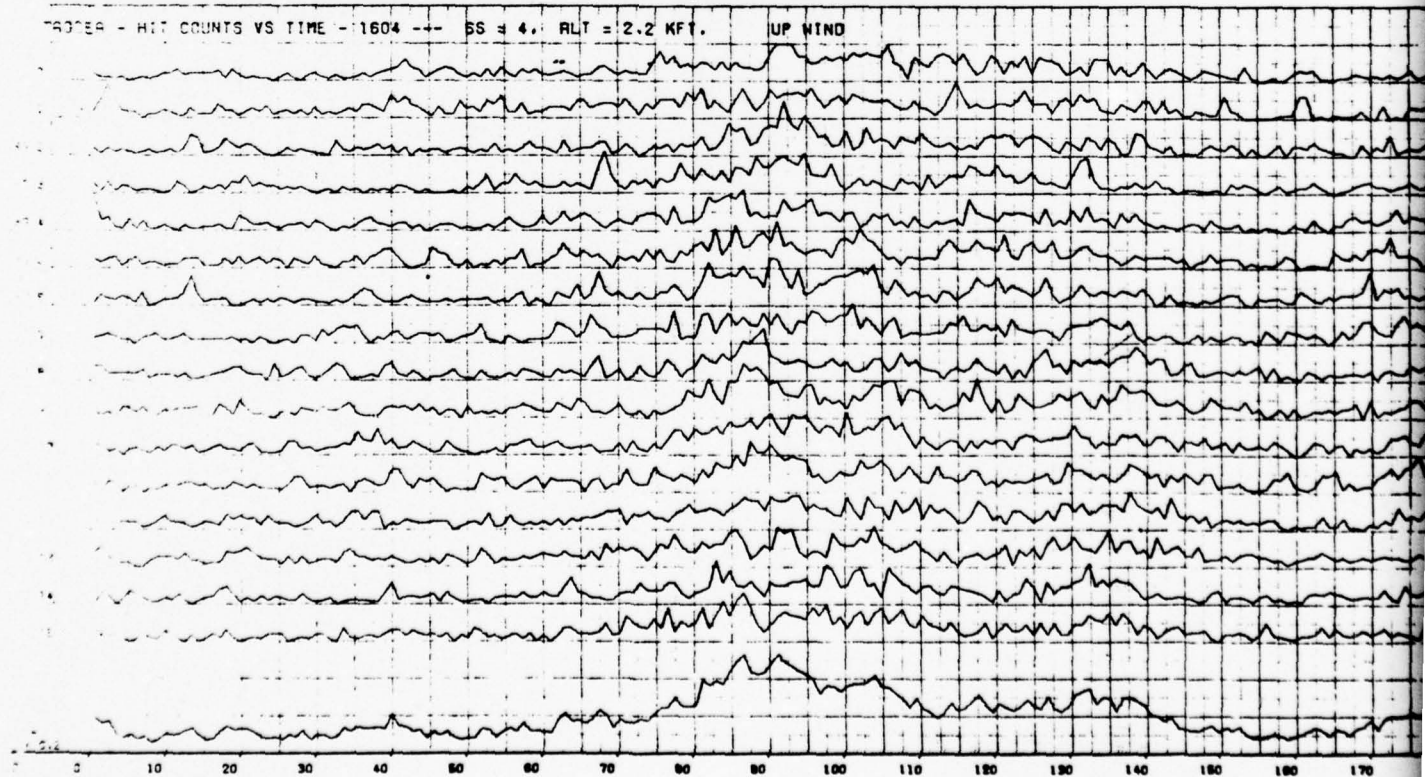


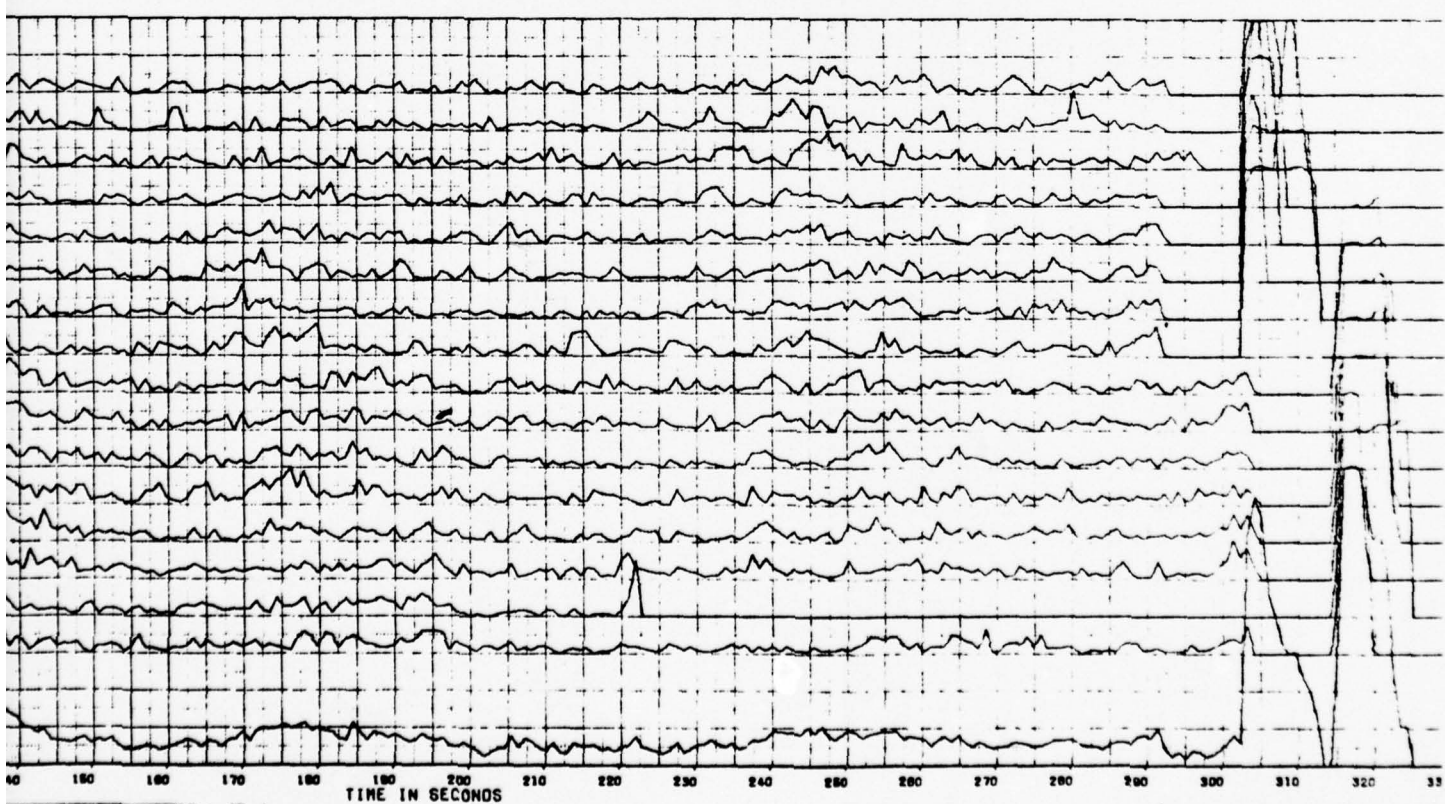
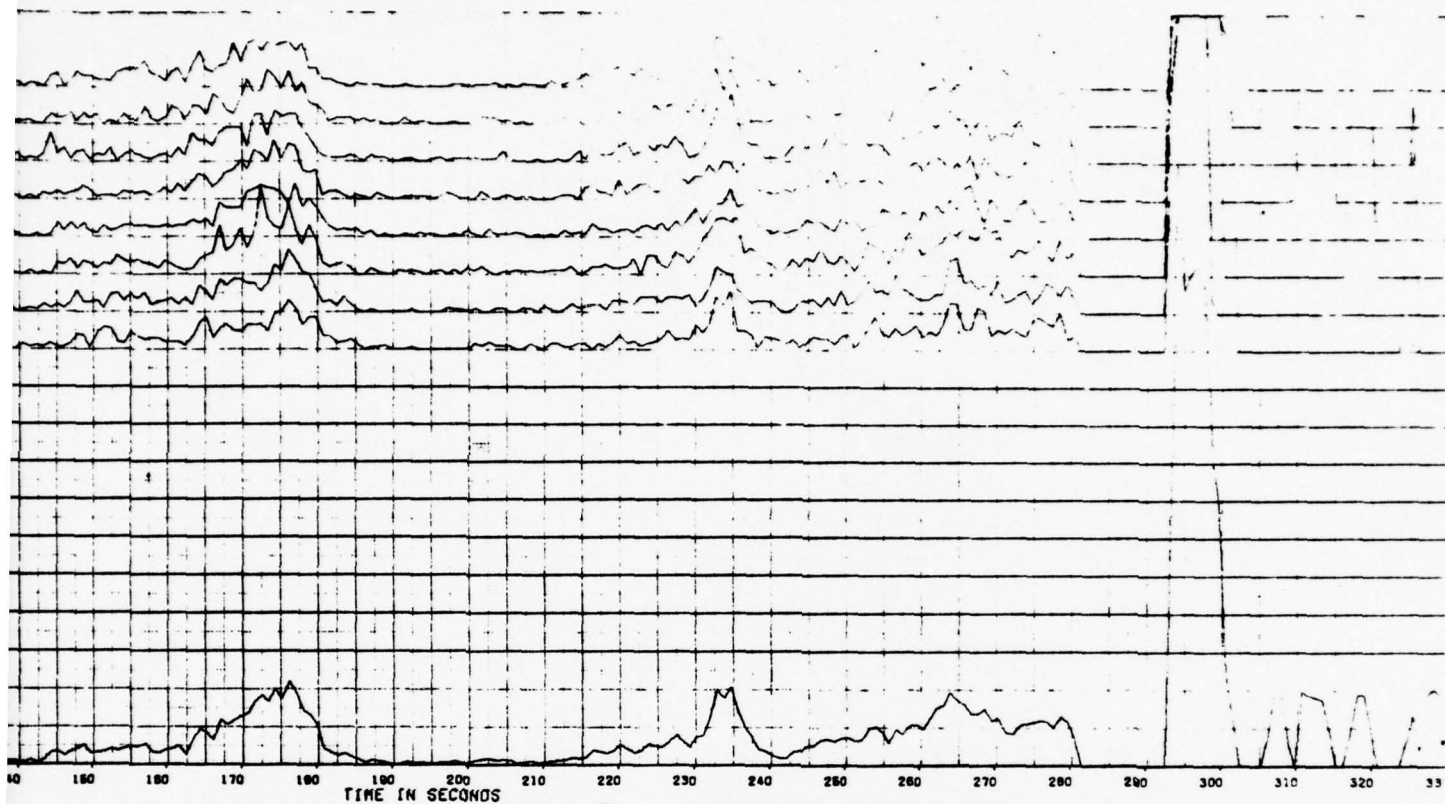
H-99/100

TAGSEA HIT COUNTS vs TIME-1603-SS=4,ALT=1.1KFT CROSS WIND



TAGSEA HIT COUNTS vs TIME-1604-SS=4,ALT=2.2KFT UP WIND

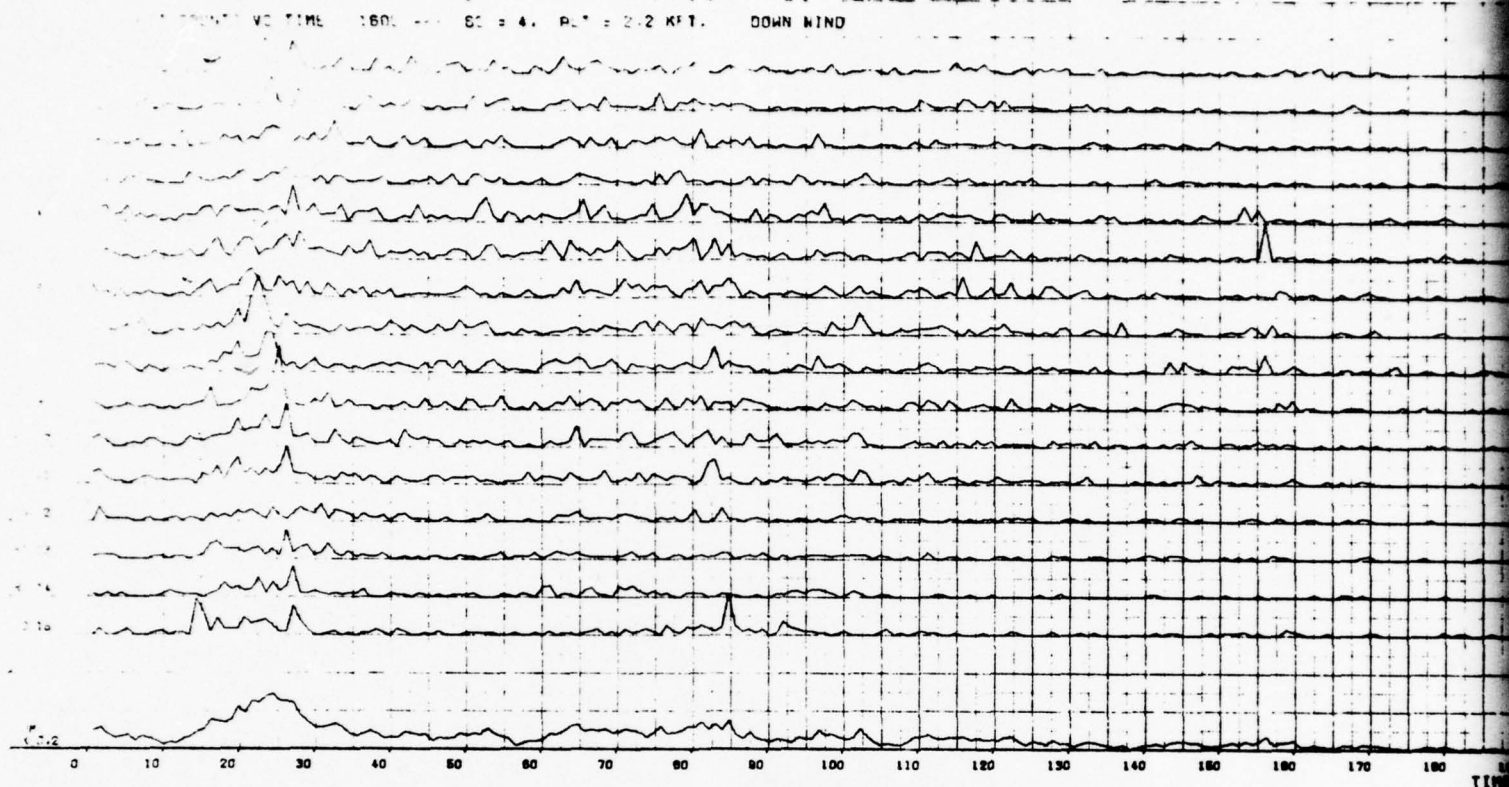




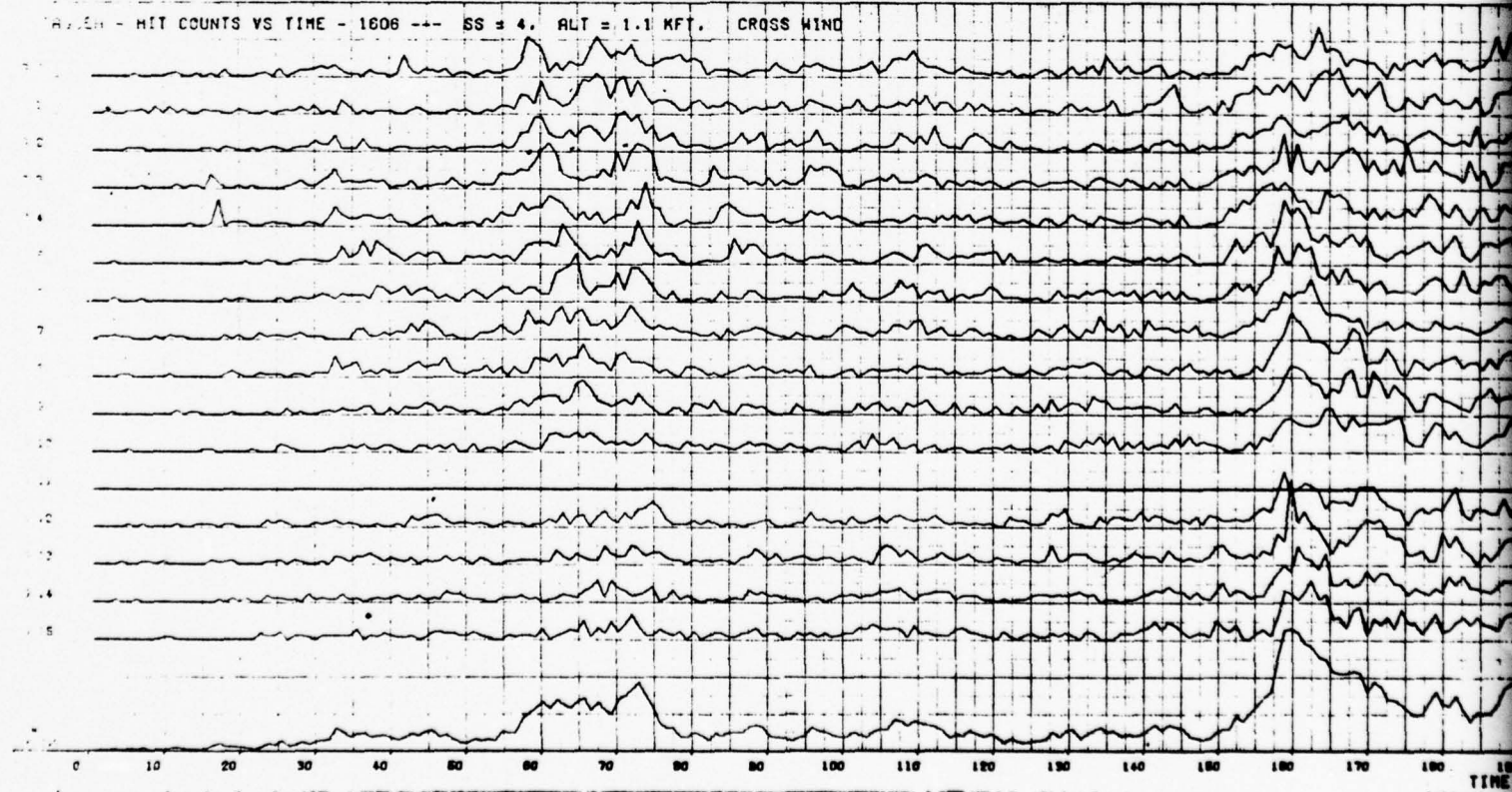
H-101/102

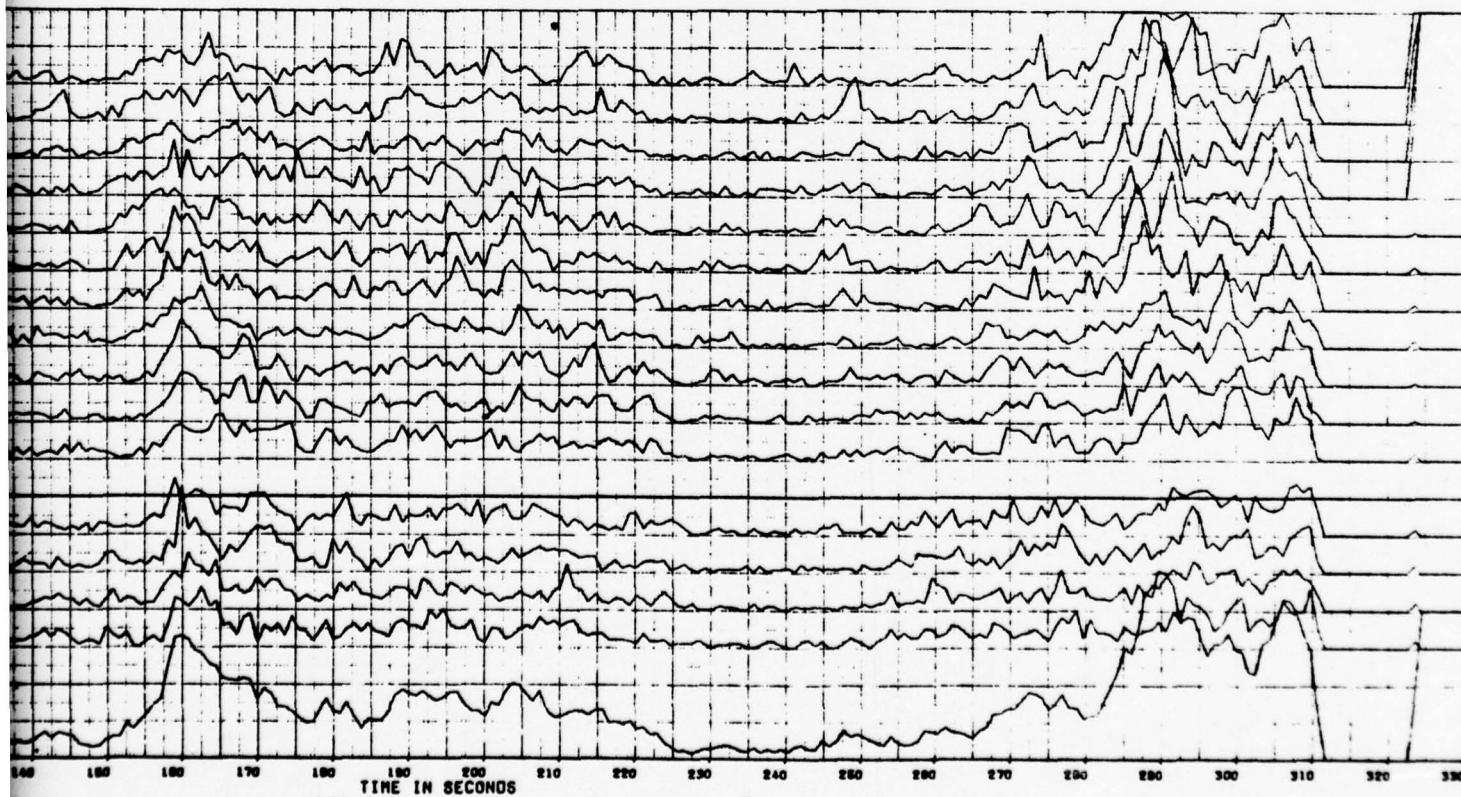
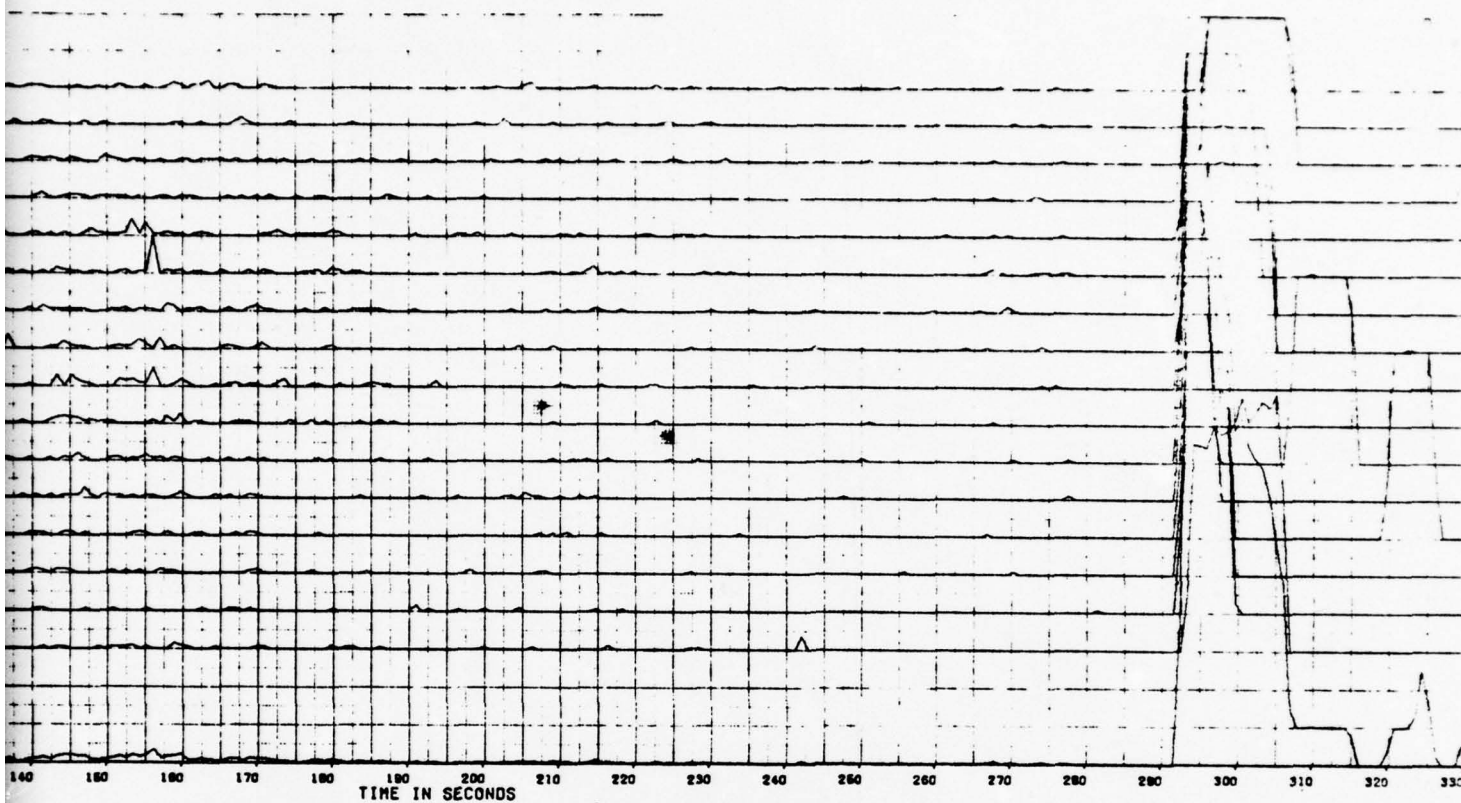
2

TAGSEA HIT COUNTS vs TIME 1605-SS=4 ALT=2.2KFT DOWN WIND



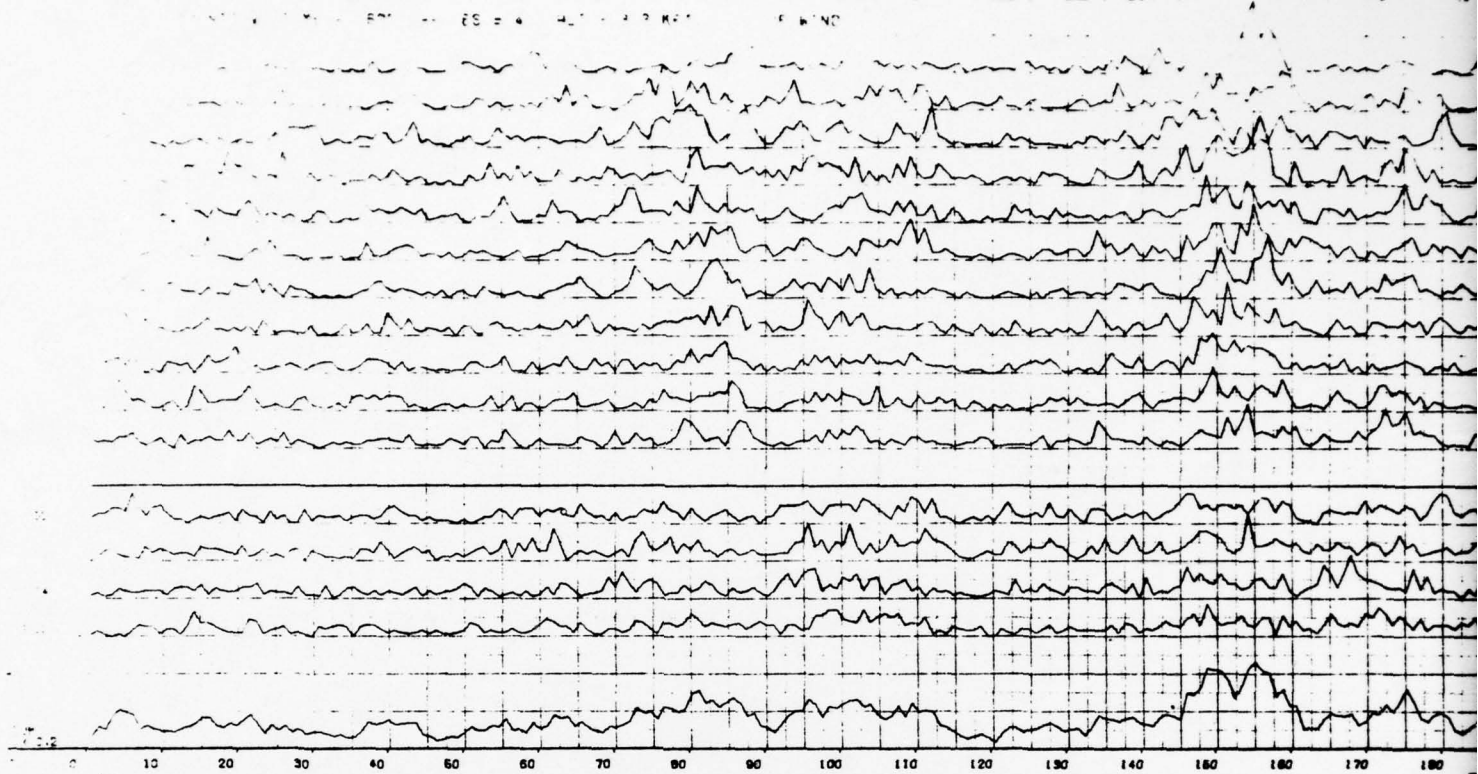
TAGSEA HIT COUNTS vs TIME-1606-SS=4,ALT=1.1KFT CROSS WIND



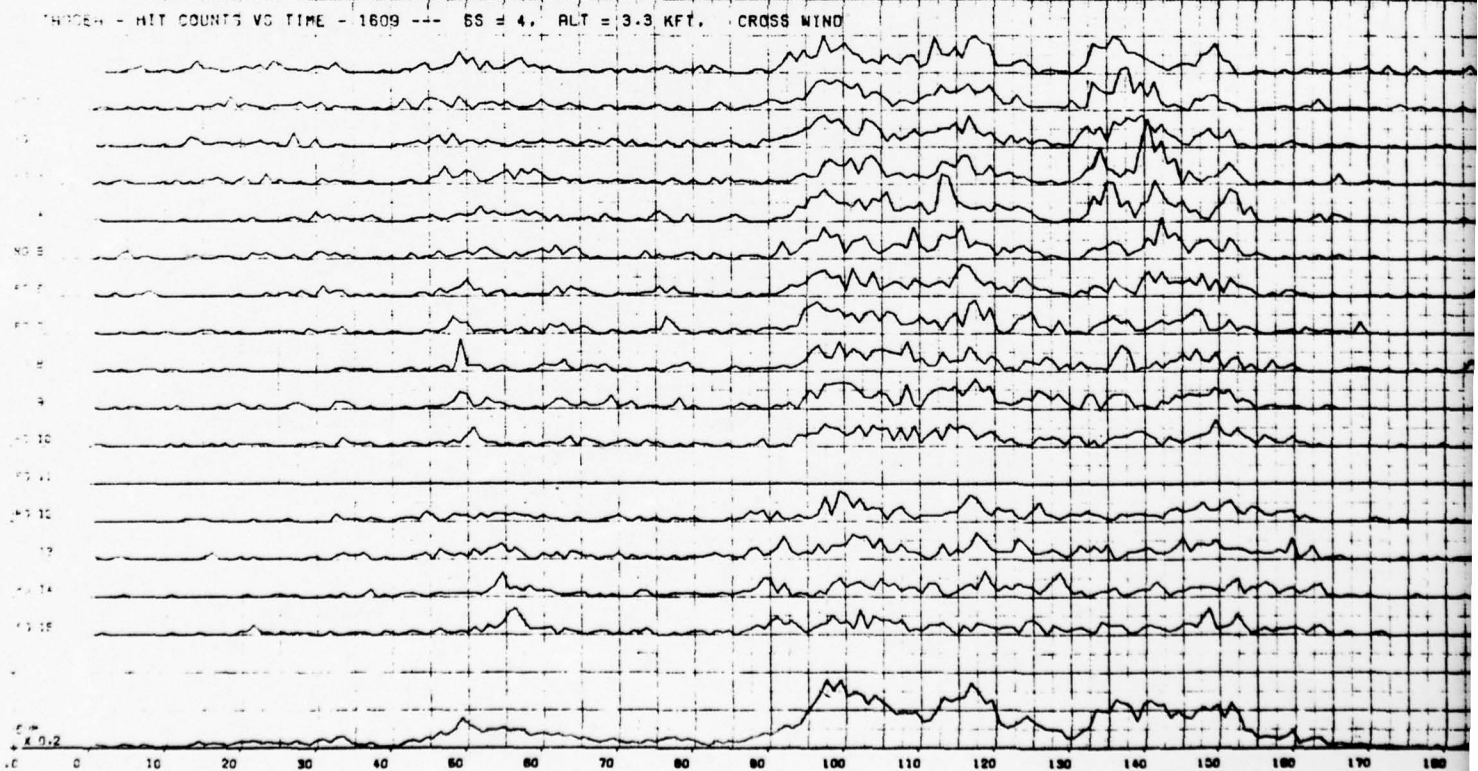


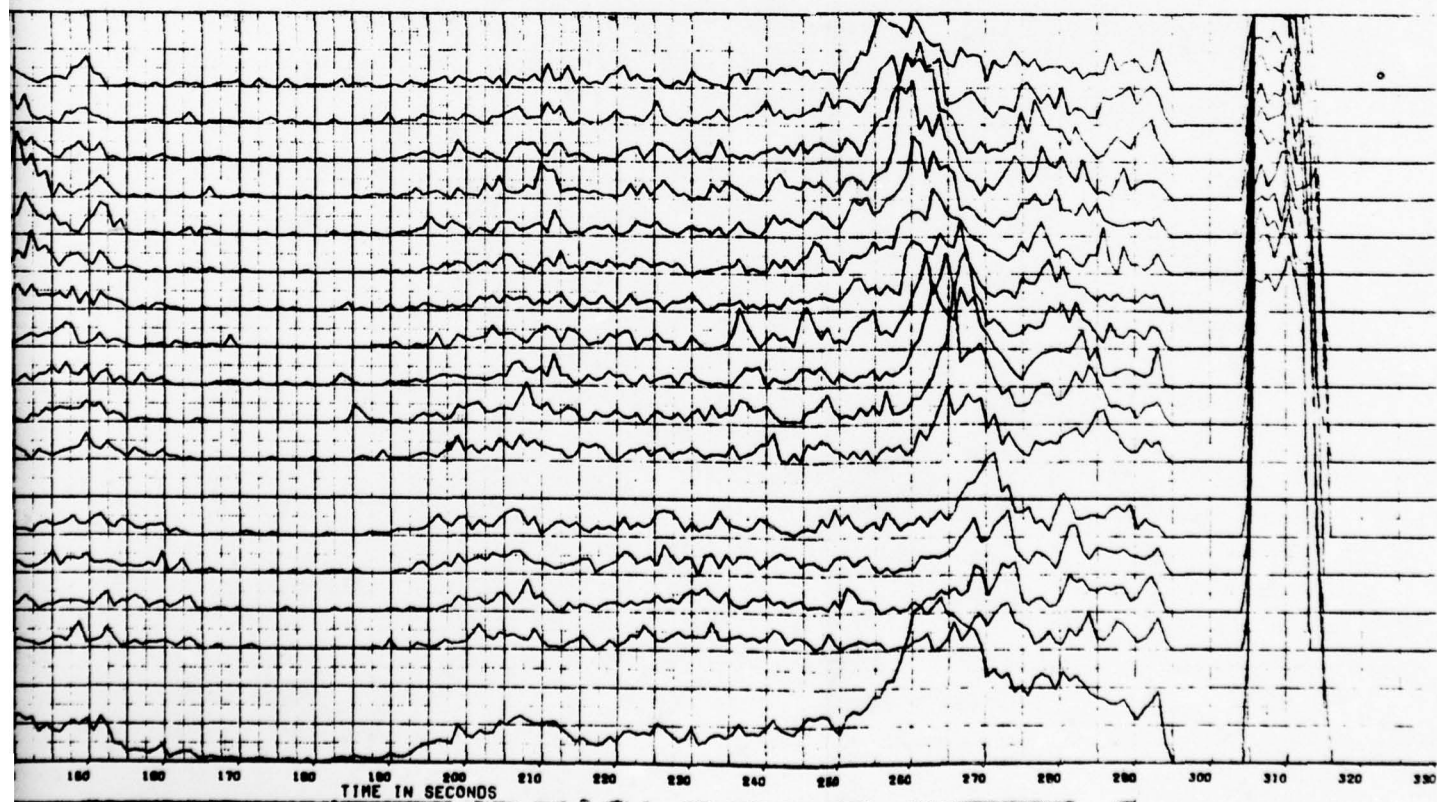
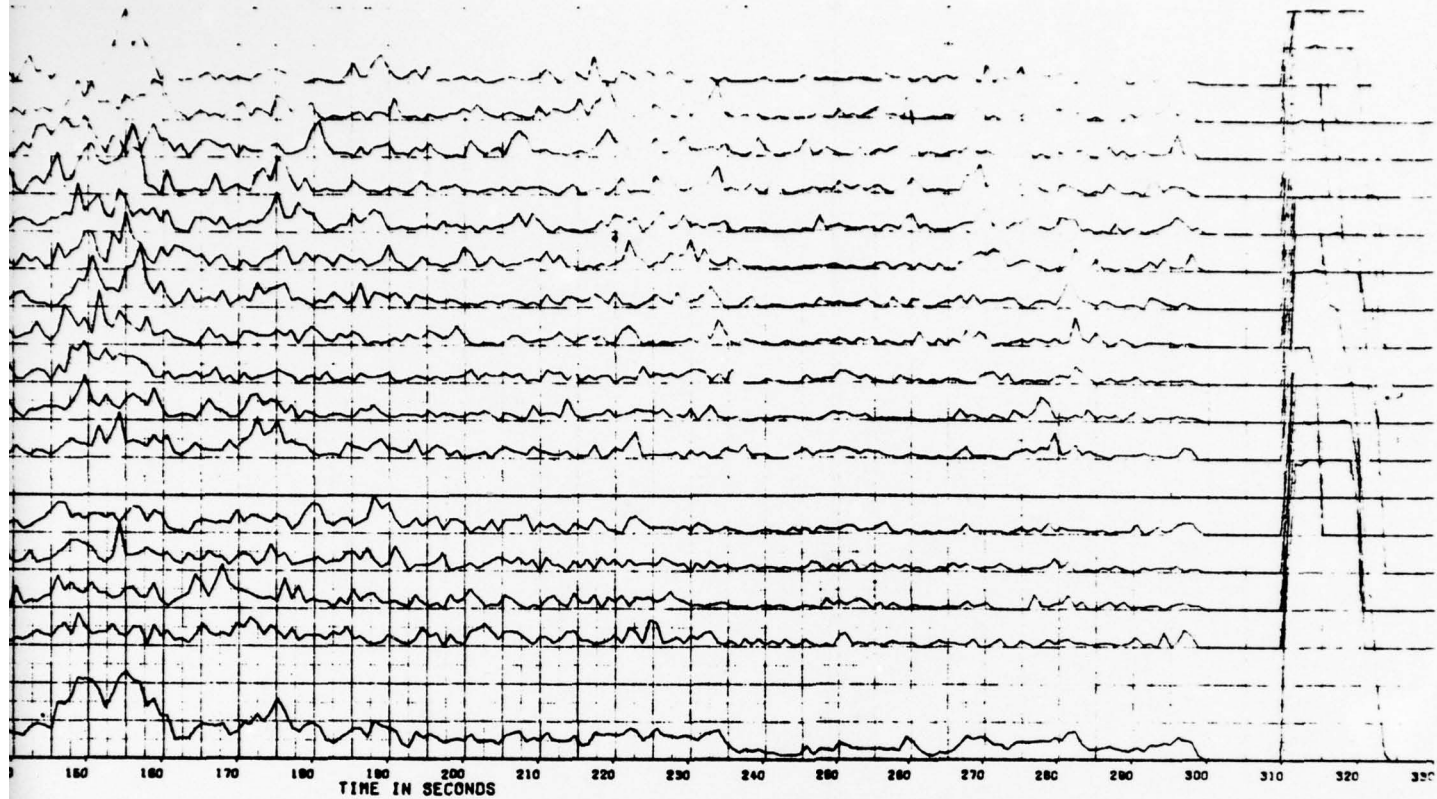
H-103/104

WSEA HIT COUNTS vs TIME-1607-SS=4,ALT=3.3KFT UP WIND



TAGSEA HIT COUNTS vs TIME-1609-SS=4,ALT=3.3KFT CROSS WIND



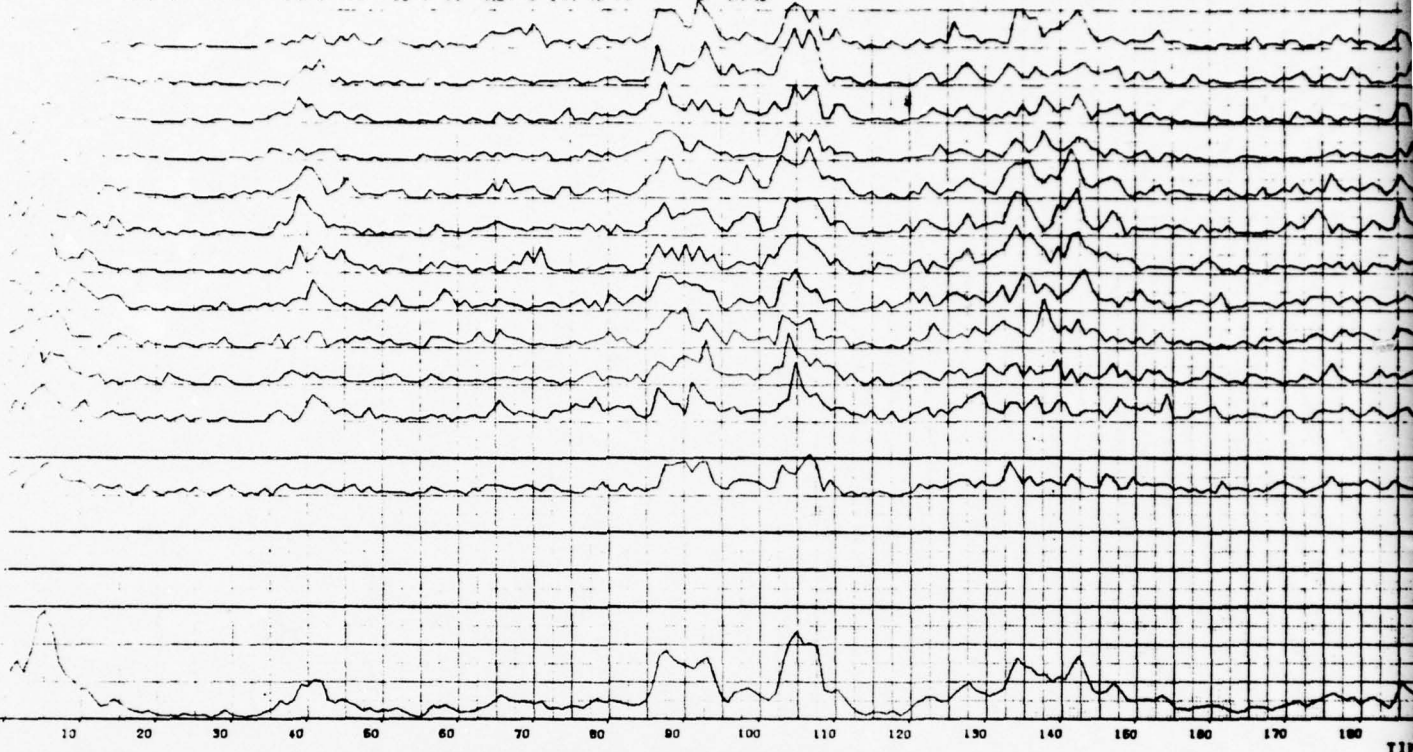


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2

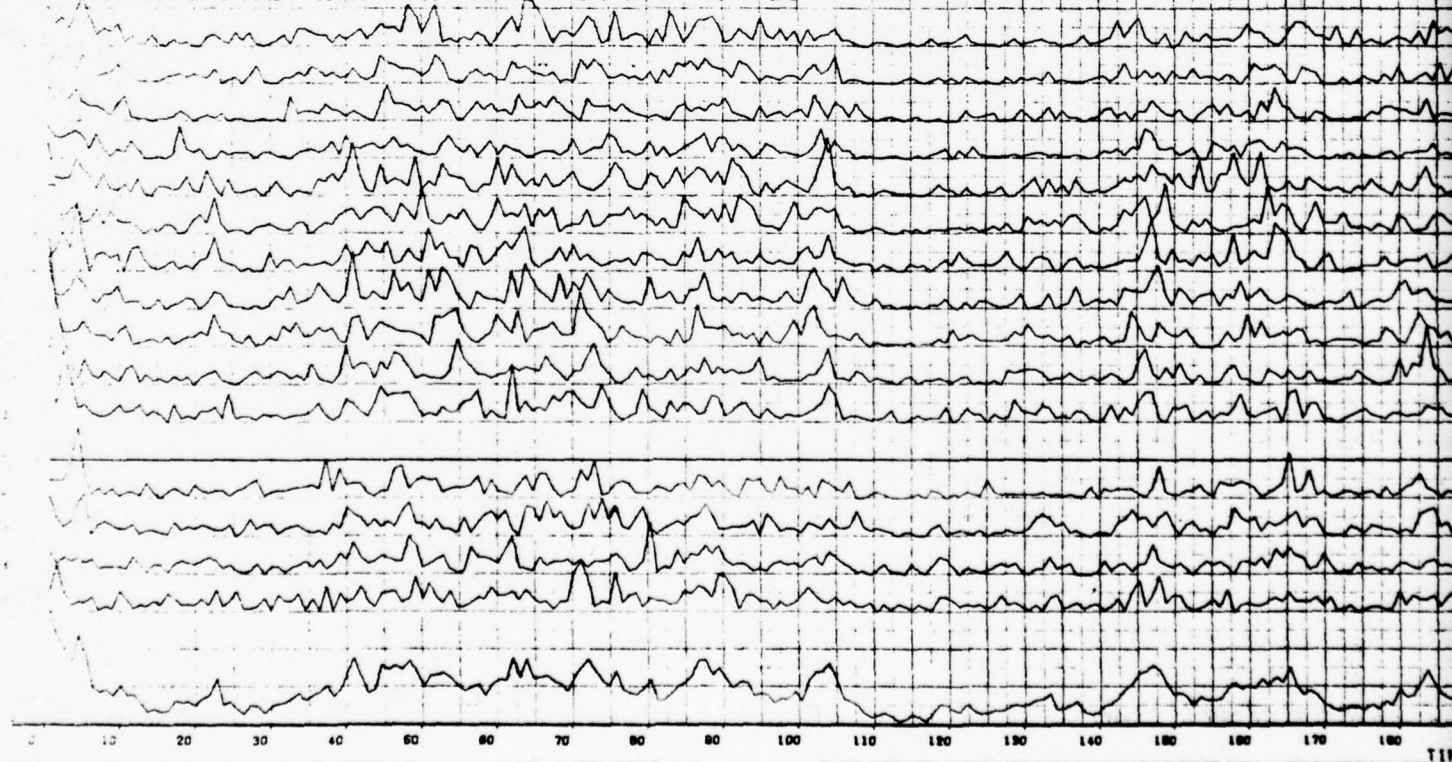
TAGSEA HIT COUNTS vs TIME-16101-SS=5,ALT=1.1KFT UP WIND

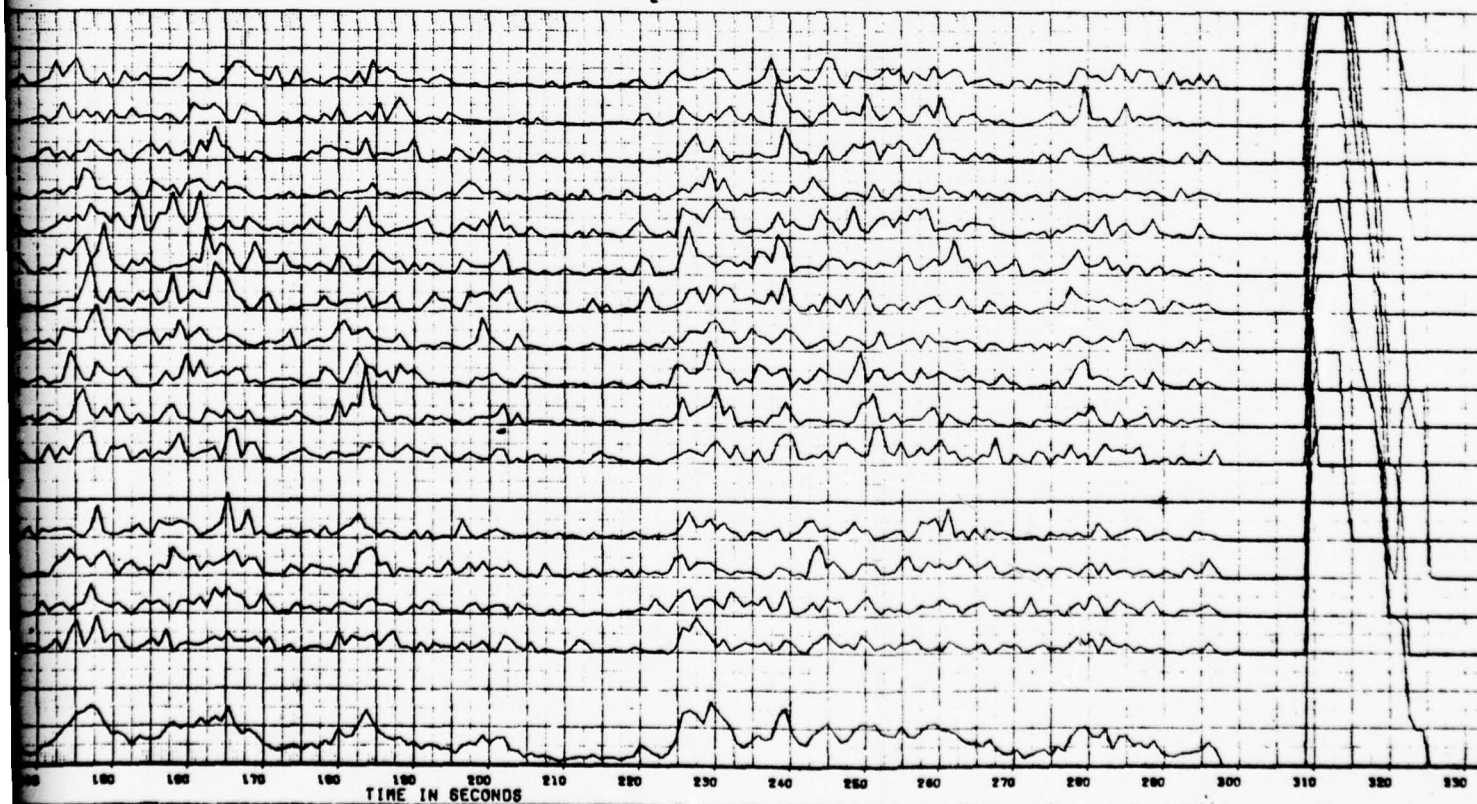
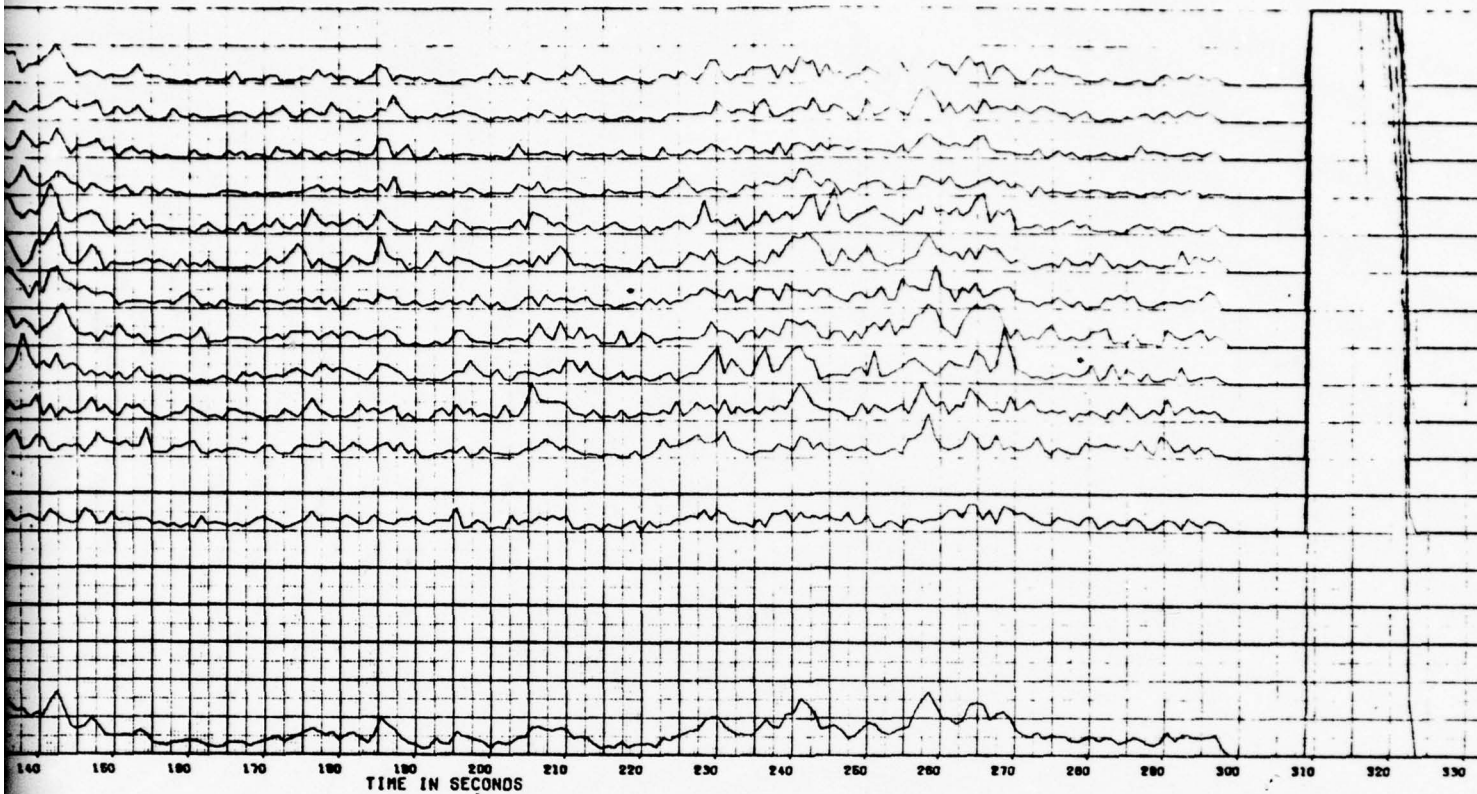
NTS V TIME SS = 5. ALT = 1.1 KFT. UP WIND



TAGSEA HIT COUNTS vs TIME-16102-SS=4,ALT=1.1KFT DOWN WIND

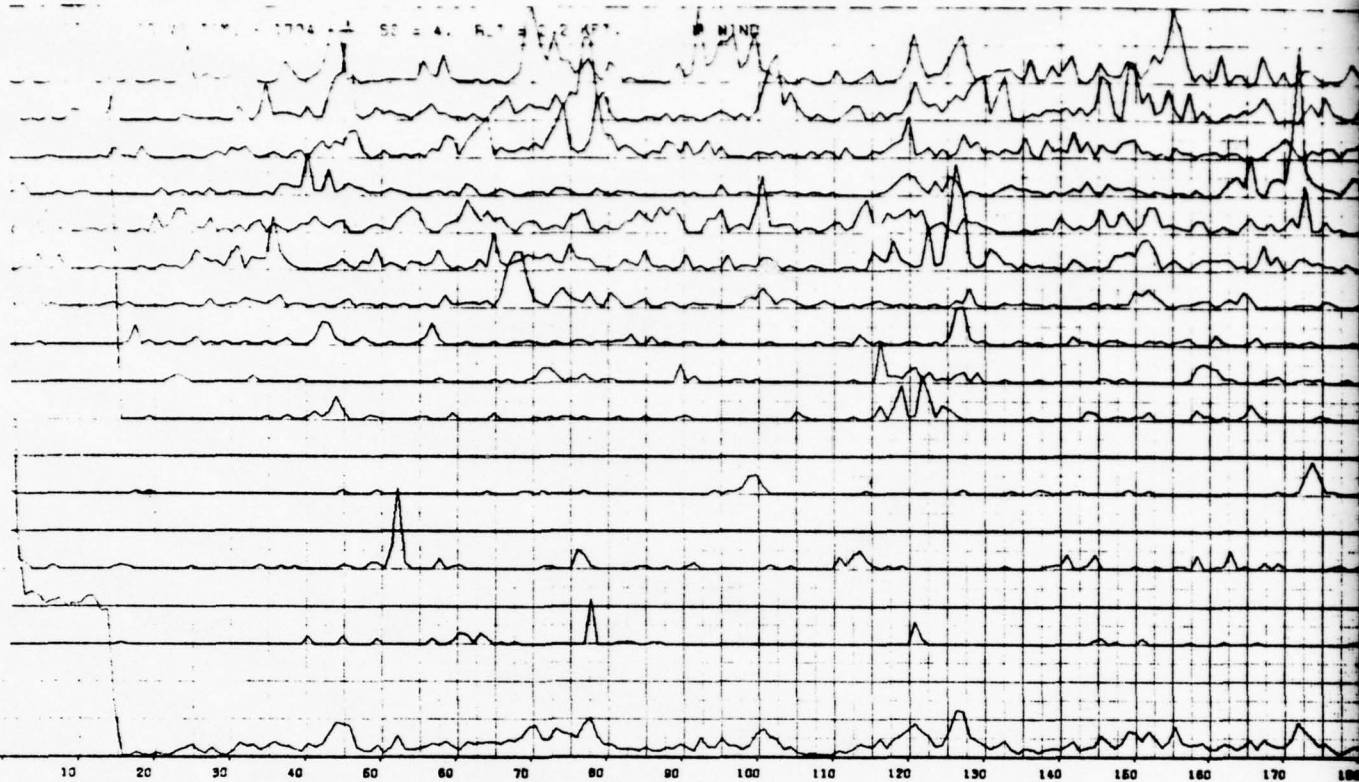
SEA HIT COUNTS VS TIME - 16102--- SS = 4. ALT = 1.1 KFT. DOWN WIND





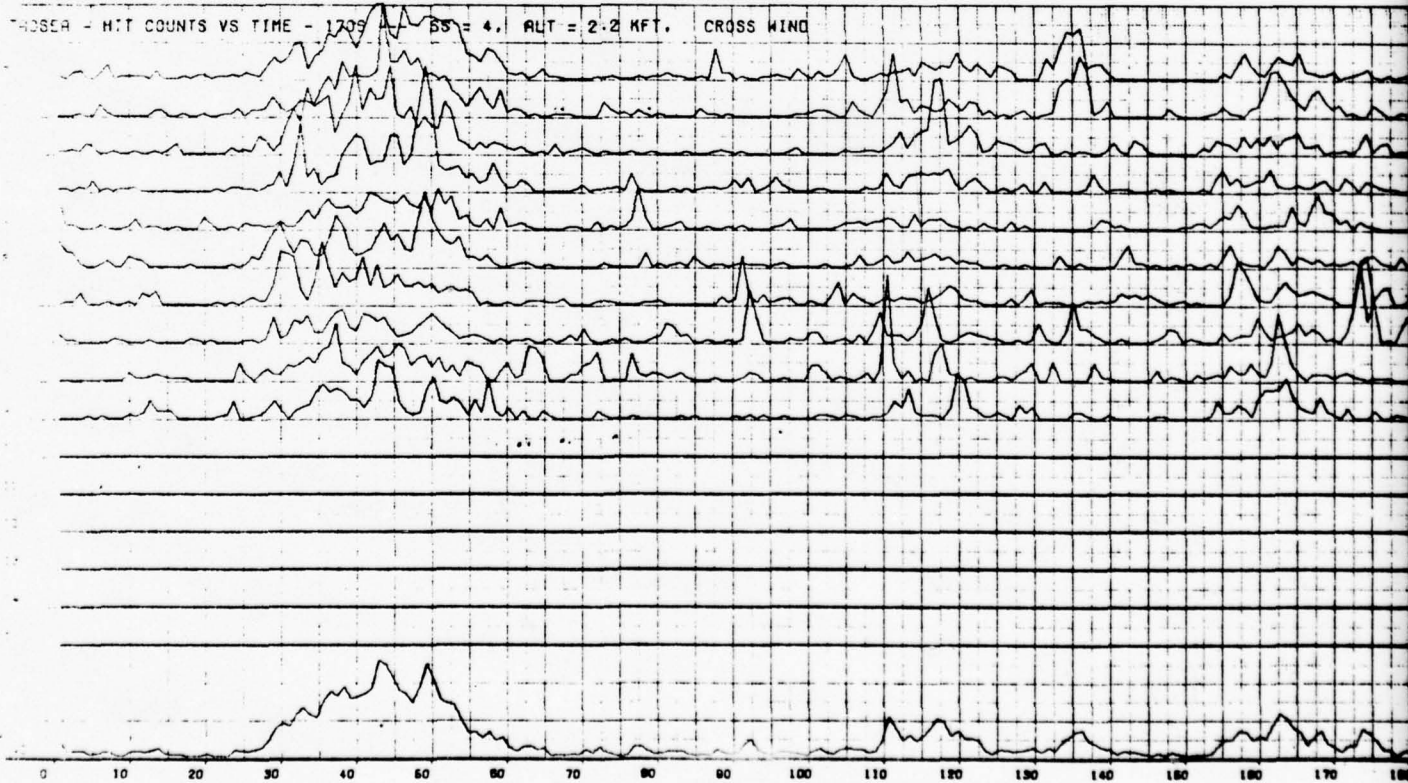
H-107/108

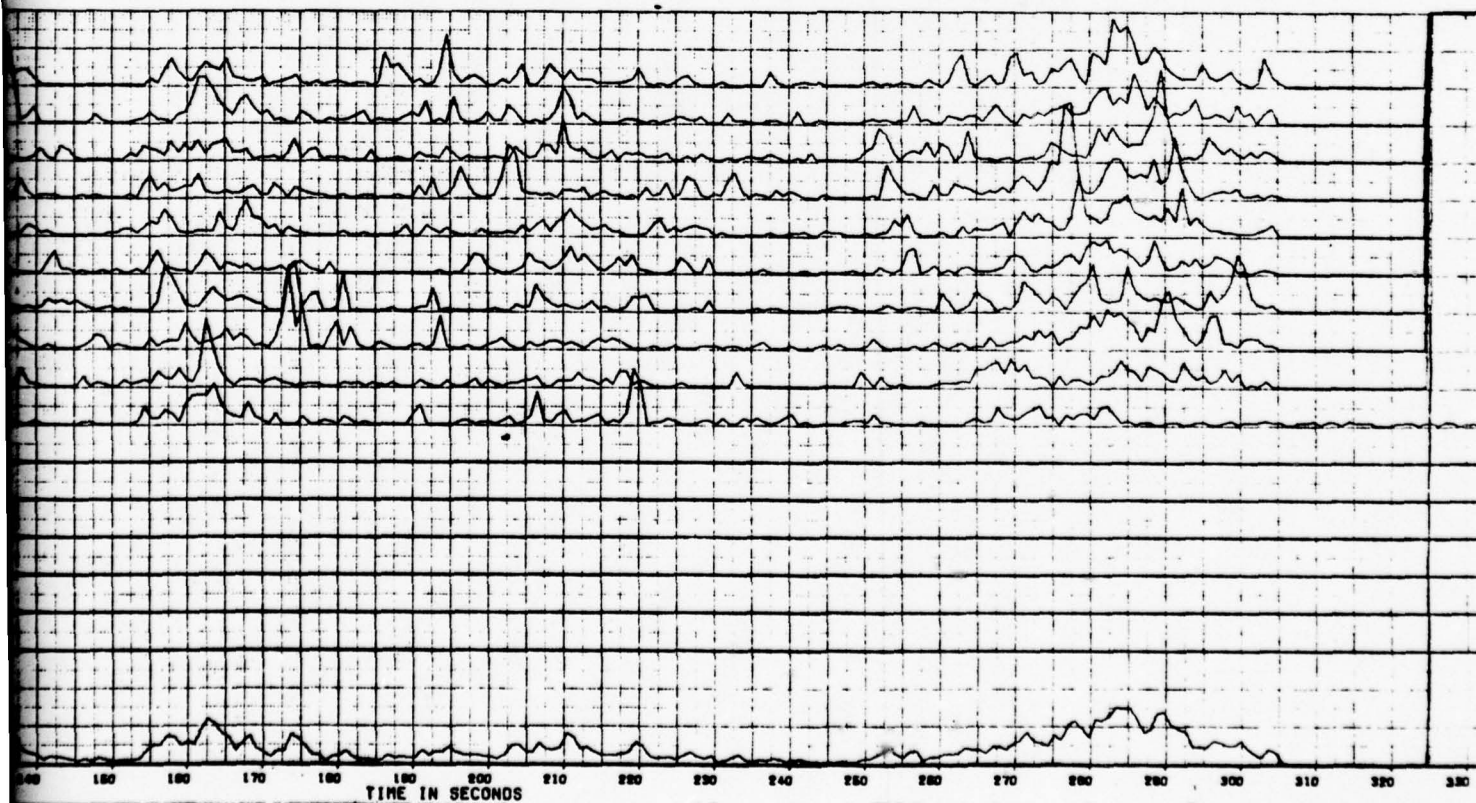
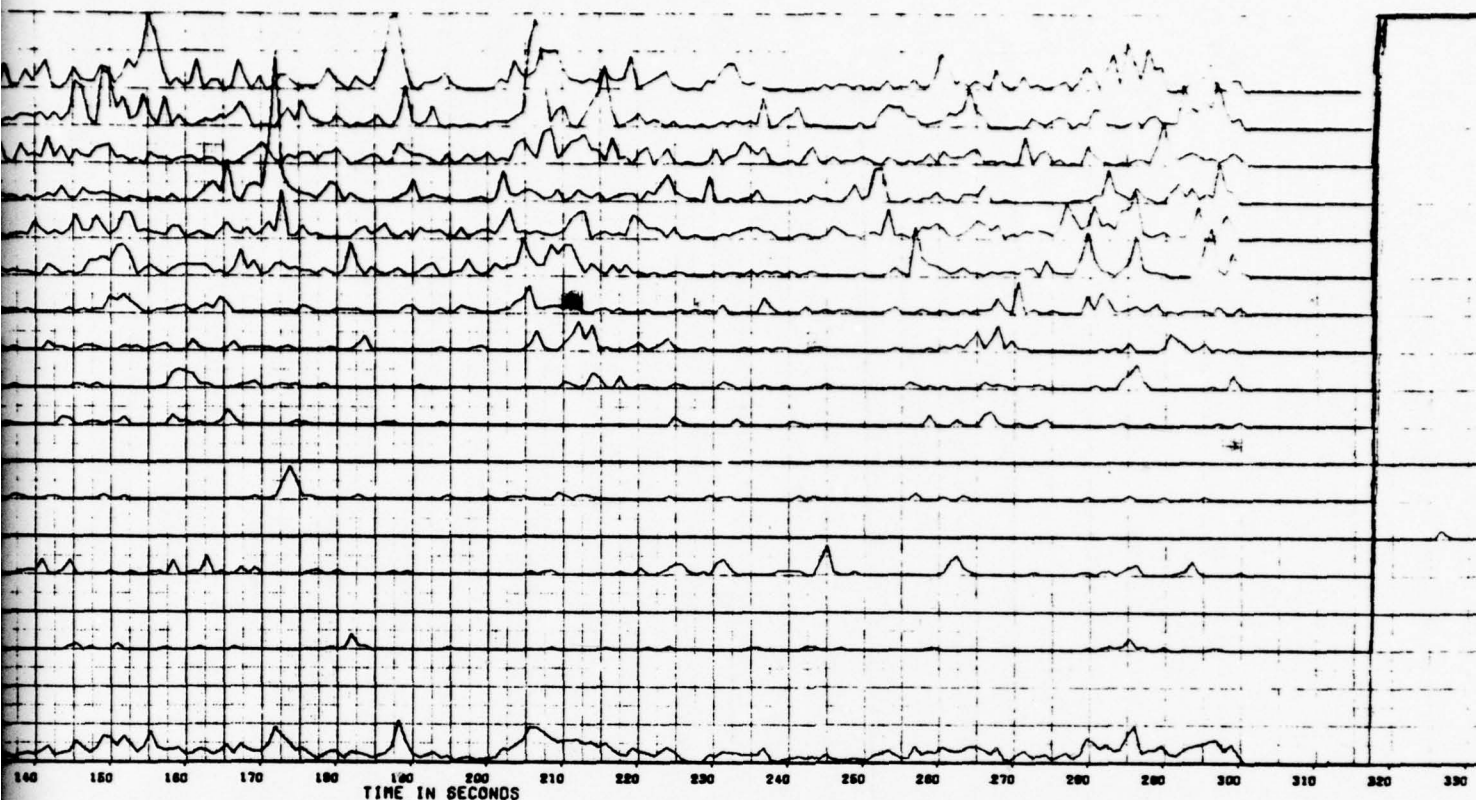
TAGSEA HIT COUNTS vs TIME-1704-SS=4,ALT=2.2KFT UP WIND



TAGSEA HIT COUNTS vs TIME-1706-SS=4,ALT=2.2KFT CROSS WIND

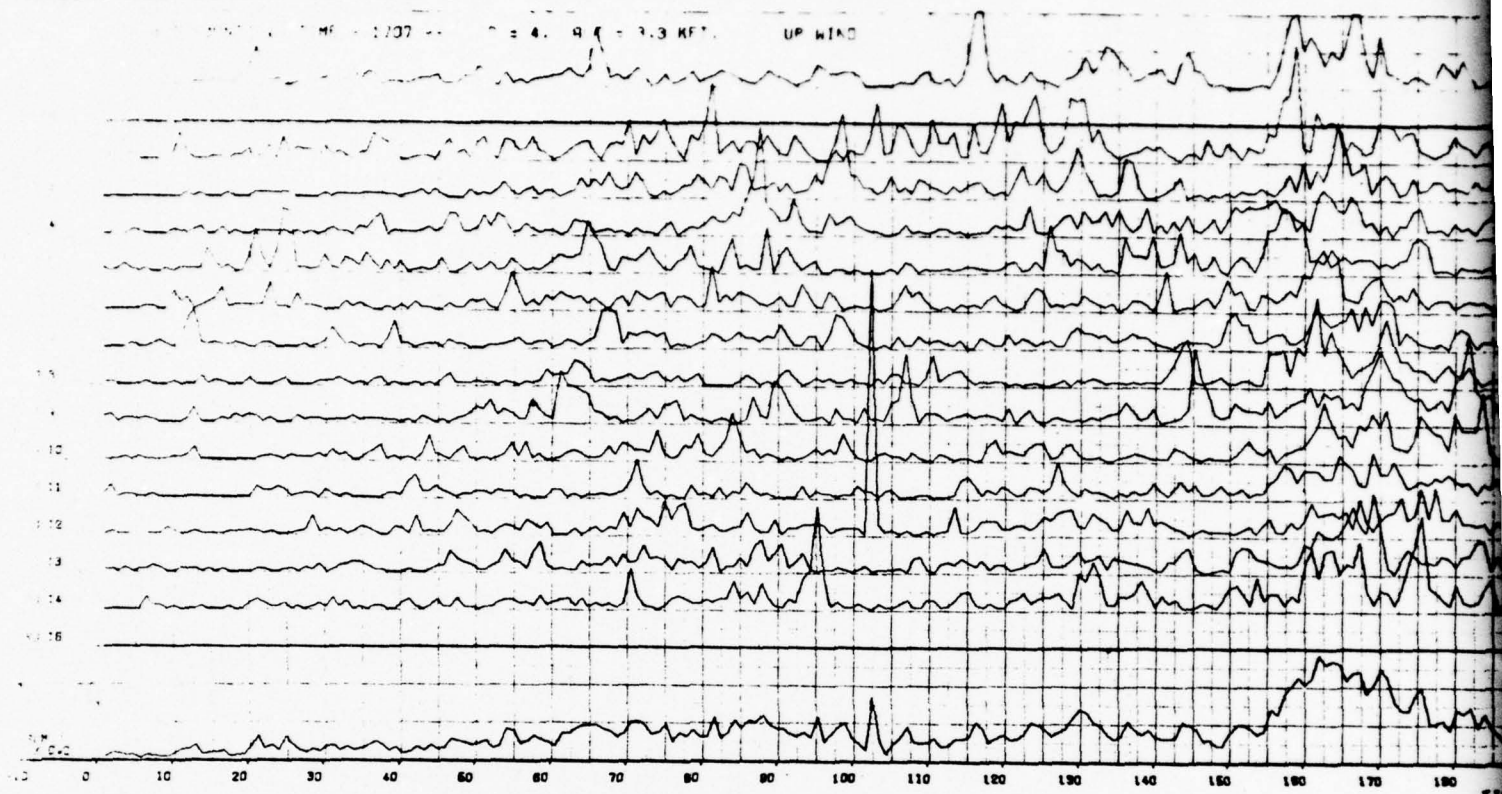
TAGSEA - HIT COUNTS VS TIME - 1706-SS=4,ALT=2.2KFT, CROSS WIND

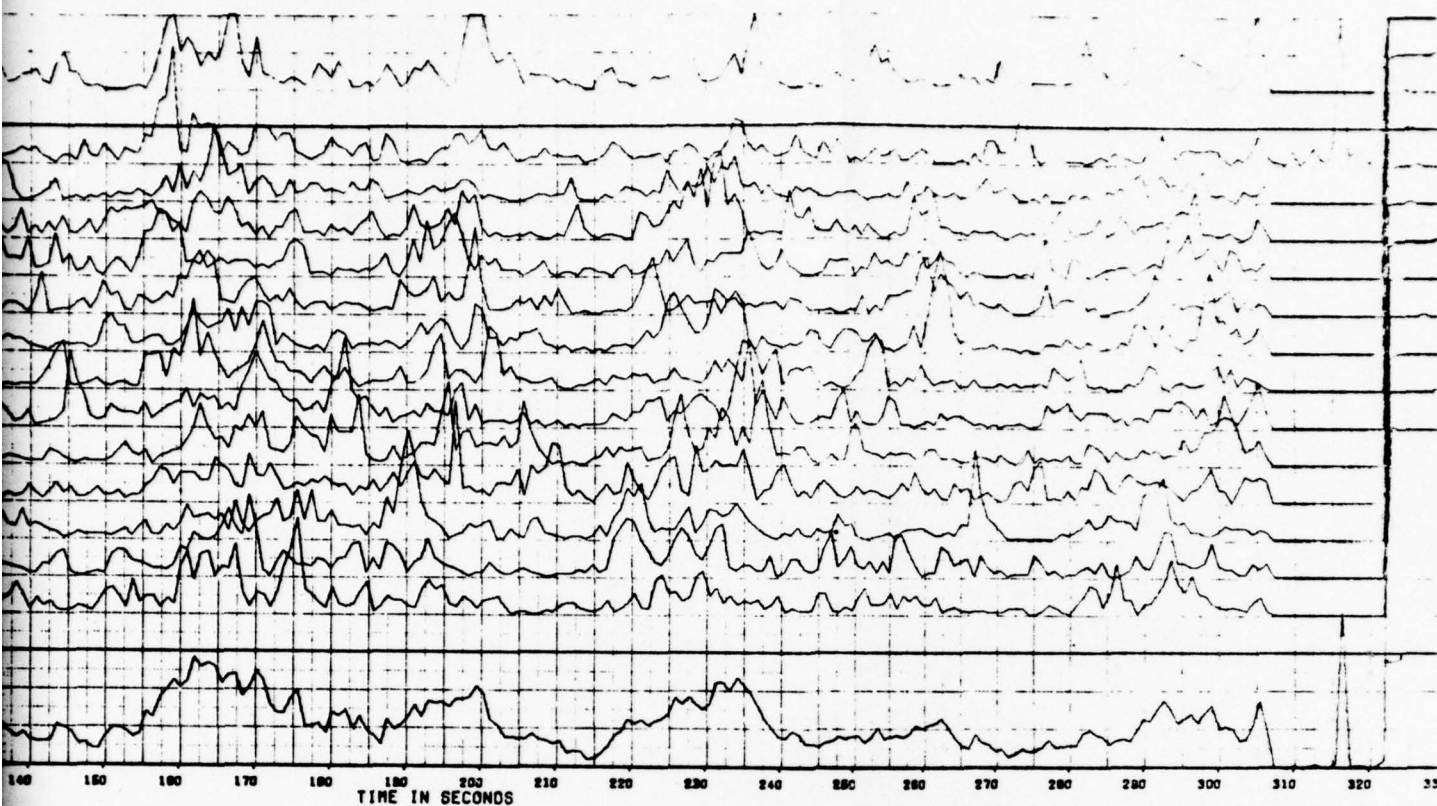




H-109/110

365
TARSEA HIT COUNTS vs TIME-1707-SS=4,ALT=3.3KFT UP WIND





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1.3 Conditional Probability Maps

Conditional Probability Maps included here show three principal plane cuts through the 15 X 15 X 15 conditional probability cube at Time = 0, Range = 0 and Doppler = 0 respectively. In addition, the time collapsed array and normalization array are plotted as a function of range and doppler for all time during the run. These five plots contain most of the information regarding conditional probability. Cuts through the conditional probability cube off the principal planes contained little information and were not included in the data base. The T_1 threshold was set at 10^{-5} hit probability. The T_2 threshold was set 10^{-3} probability. Hits exceeding these thresholds are reported on the time collapsed array plot. Hits exceeding T_1 are unconditional whereas hits exceeding T_2 are conditional to reside in the space-time vicinity of hits exceeding T_1 . Details regarding conditional probability map processing are contained in Volume II, Section 9.

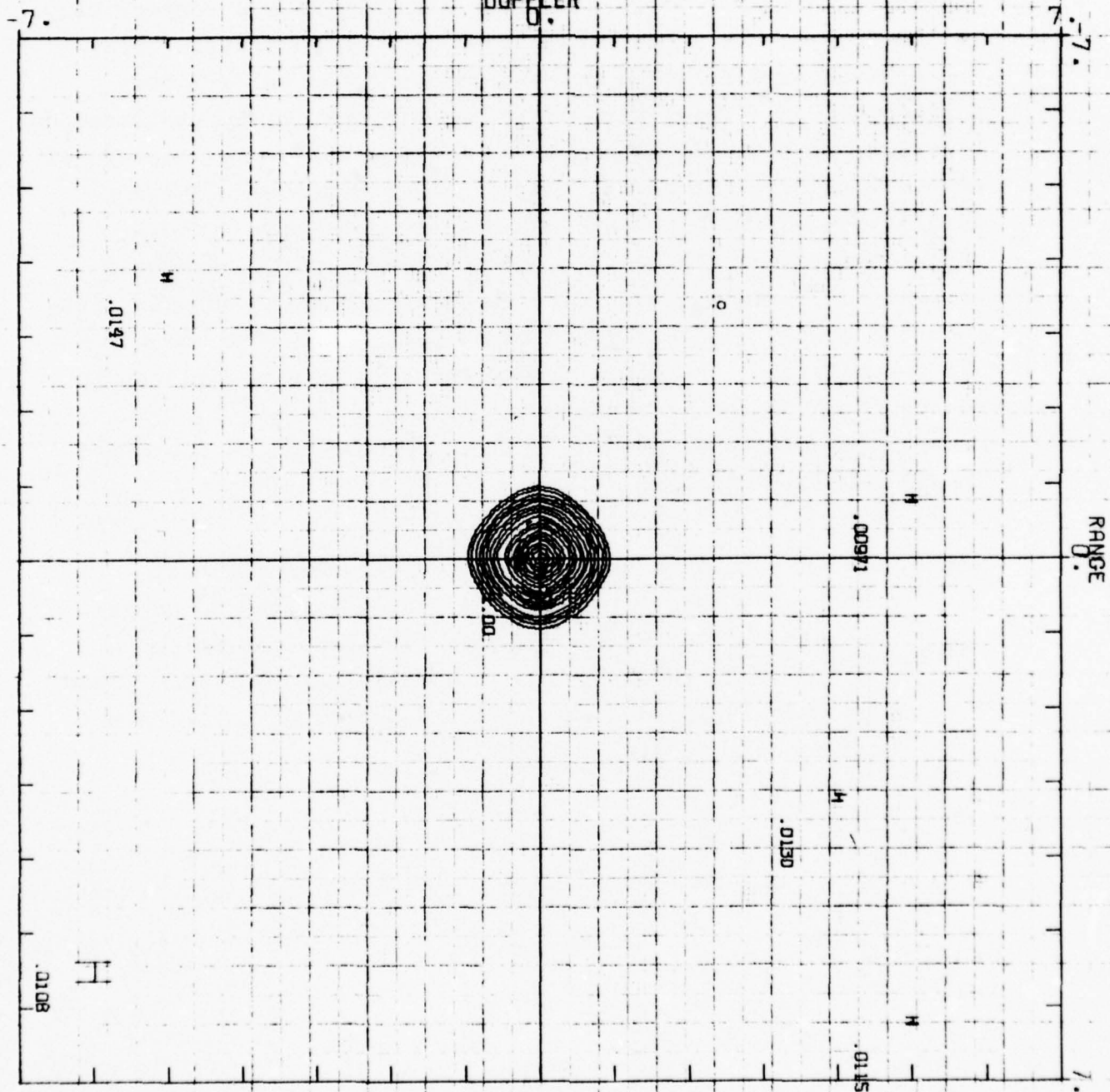
NOTE: Caution should be used in viewing these conditional probability maps. For example, the anomalies found in runs 701 and 703 were traced to data problems while run 812 is of the Nantucket Lightship not clutter. These maps were included here as an indication of their value as diagnostic tools.

CONTOUR FROM -1.10000 TO 1.0000
INTERVAL .60000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 01 CONDITIONAL PROBABILITY MAP

TAGSEA - 0601 --- SS = 5 , ALT = 1.1 KFT , UP WIND

DOPPLER
0.



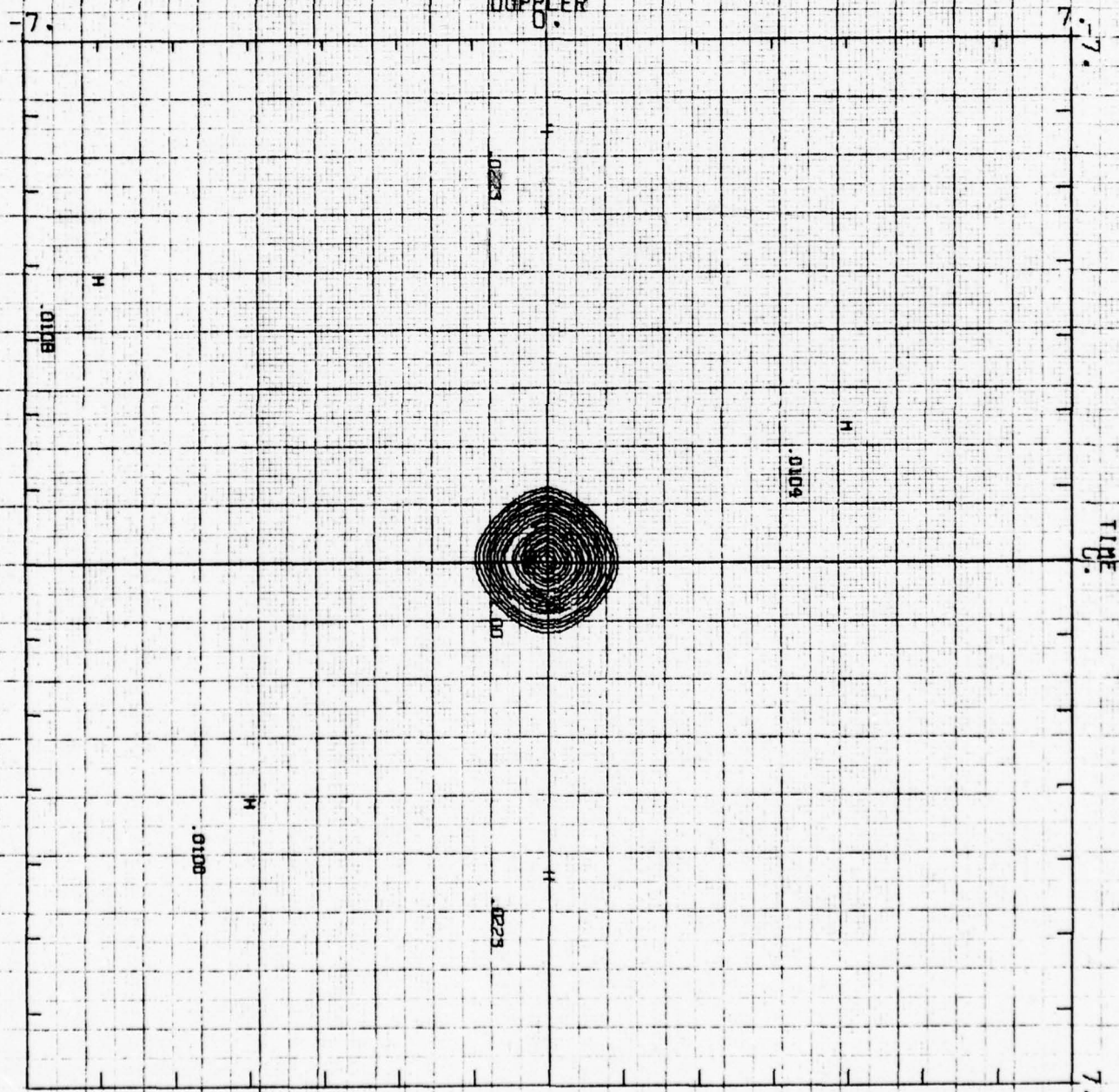
H-114

CONTOUR FROM -1.0000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP

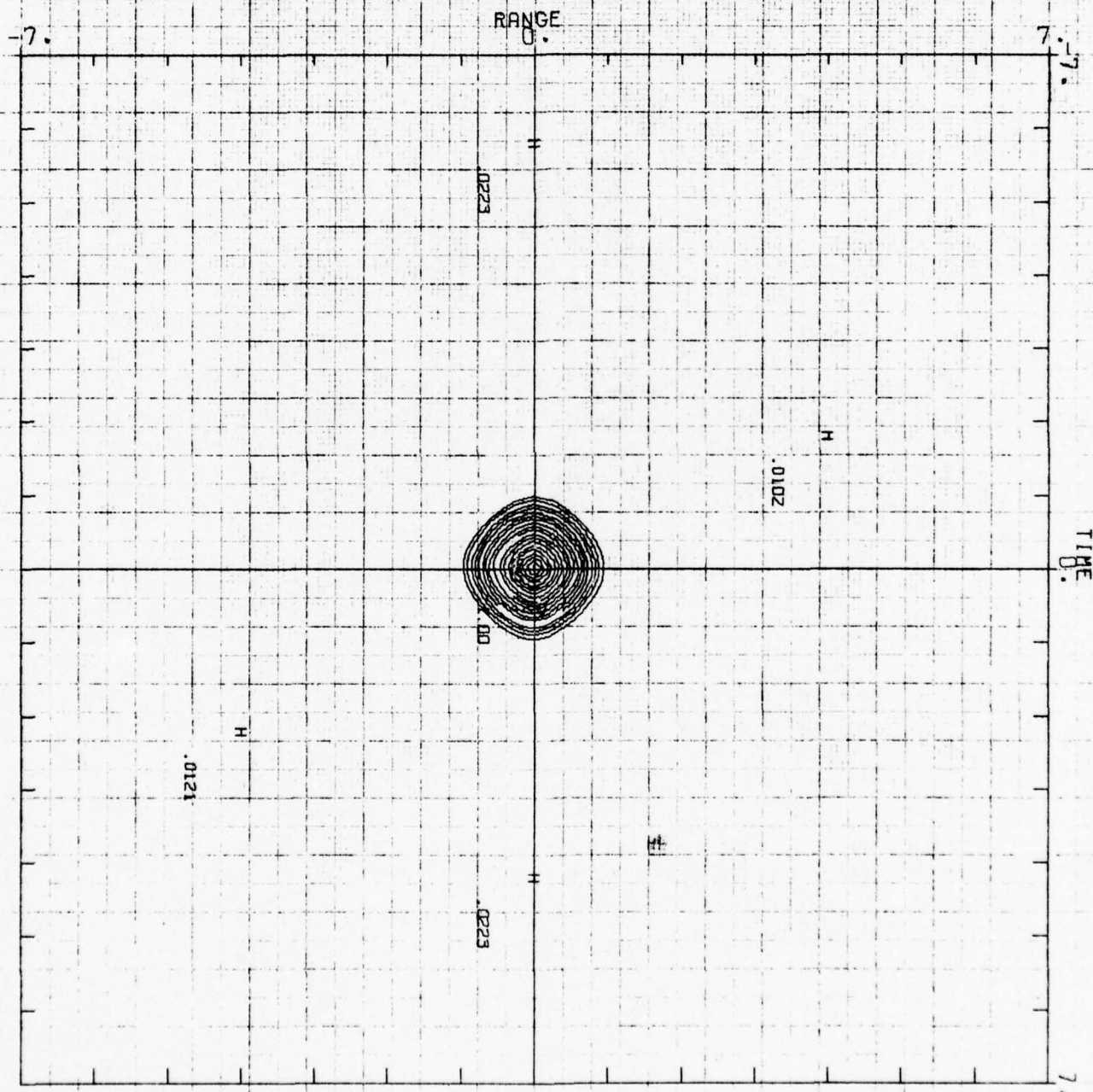
TAGSEA - 0601 --- SS = 5 ALT = 1.1 KFT. UP WIND

DOPPLER



CONTOUR FROM -1.10000 TO 1.10000
INTERVAL .60000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0601 --- SS = 5 , ALT = 1.1 KFT. UP WIND



CONTOUR FROM -1.0000 TO 1.0000

INTERVAL .5000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 538.0

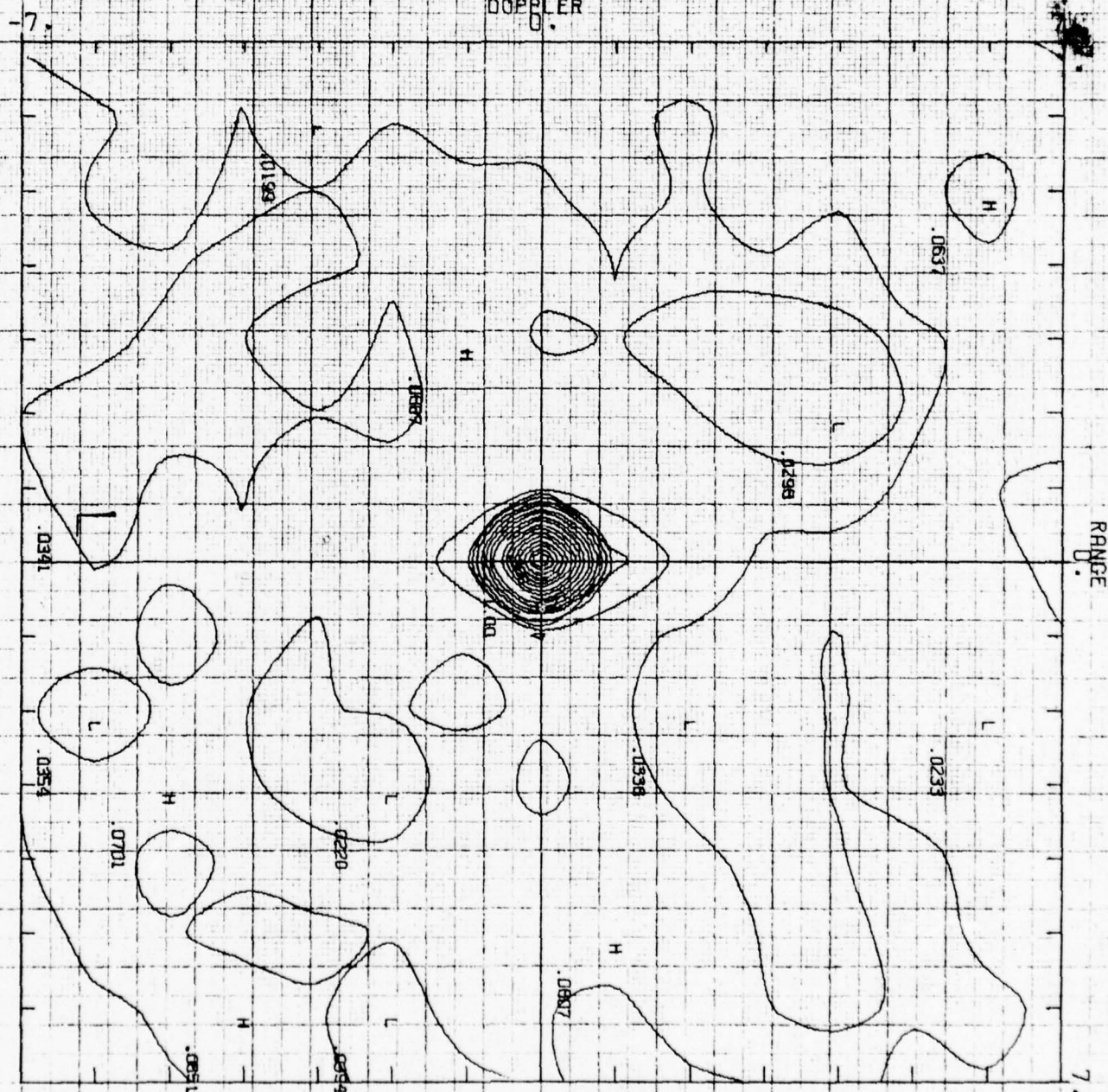
HITS GT T2 = 4524.0

TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0601 --- SS = S , ALT = 1.1 KFT. UP WIND

DOPPLER
0.



CONTOUR FROM -1.0000 TO 1.0000 TELE BAY THRESHOLD LEVEL IS 102

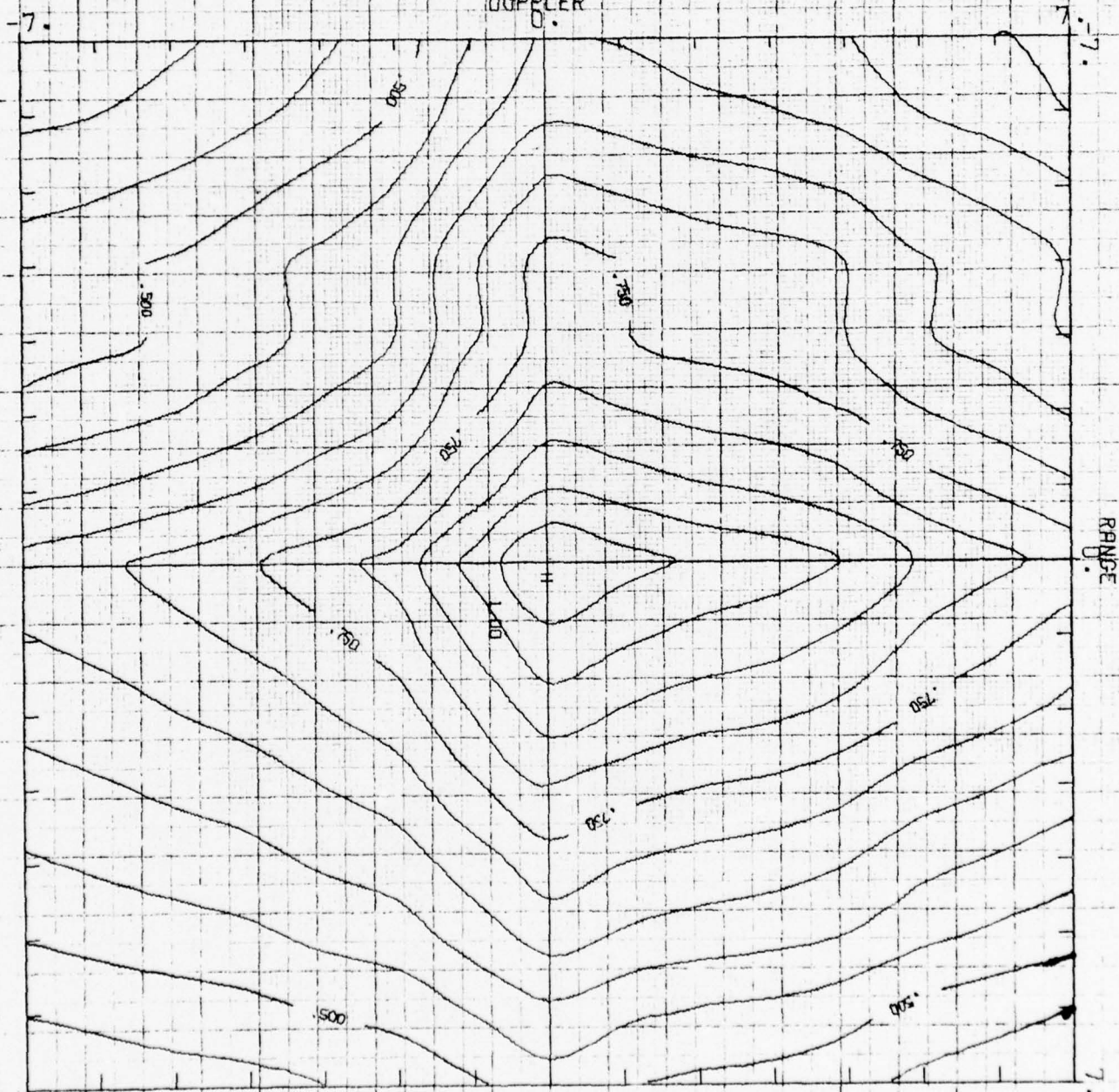
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 638.0
ARRAY TOT= 76477.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0601 --- SS = 5 , ALT = 1.1 KFT, UP WIND

DOPPLER

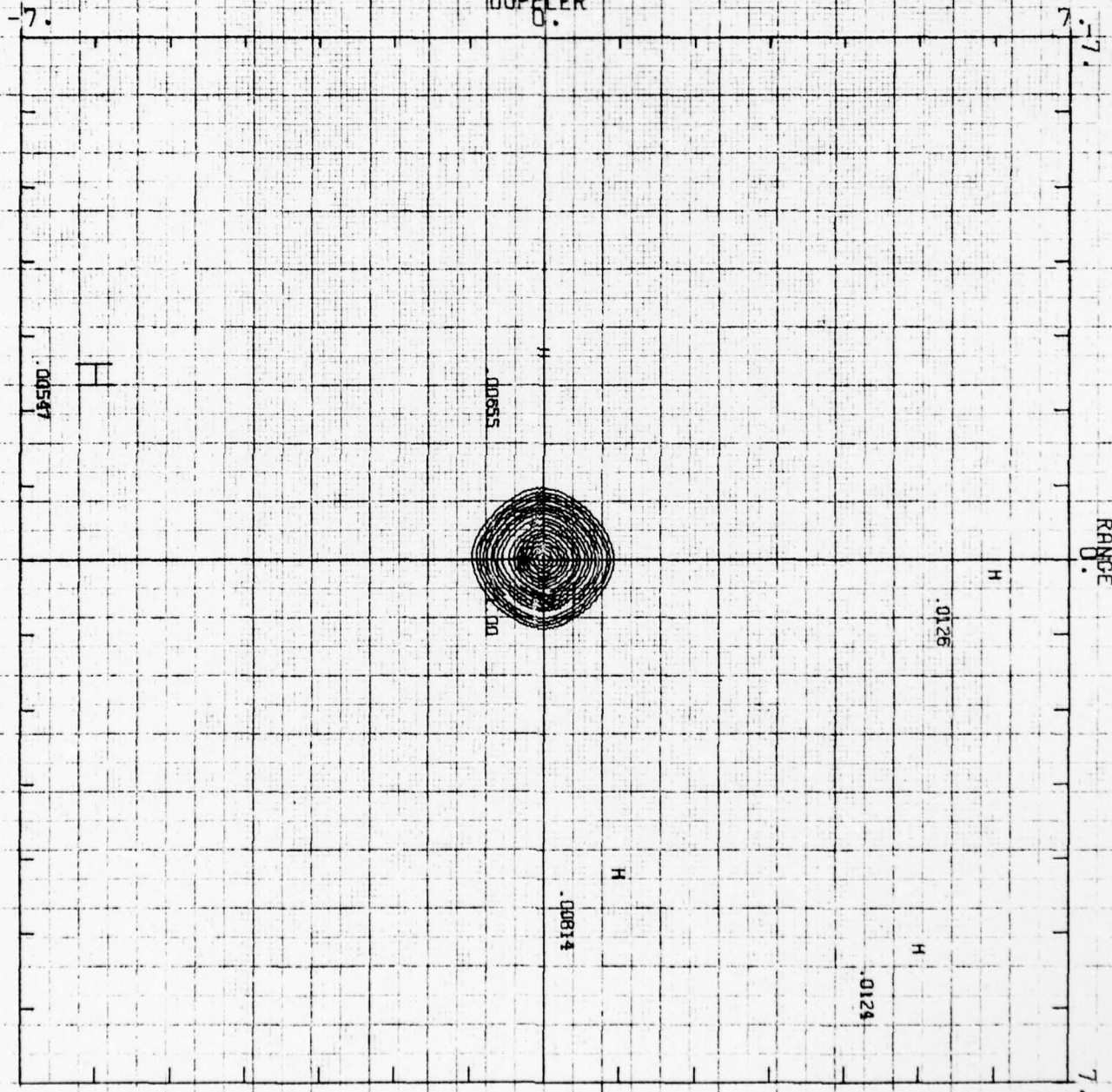


CONTOUR FROM 4.10000 TO 1.0000
INTERVAL 50000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 0605 --- SS = 5 ALT = 2.2 KFT. DOWN WIND

DOPPLER 0.



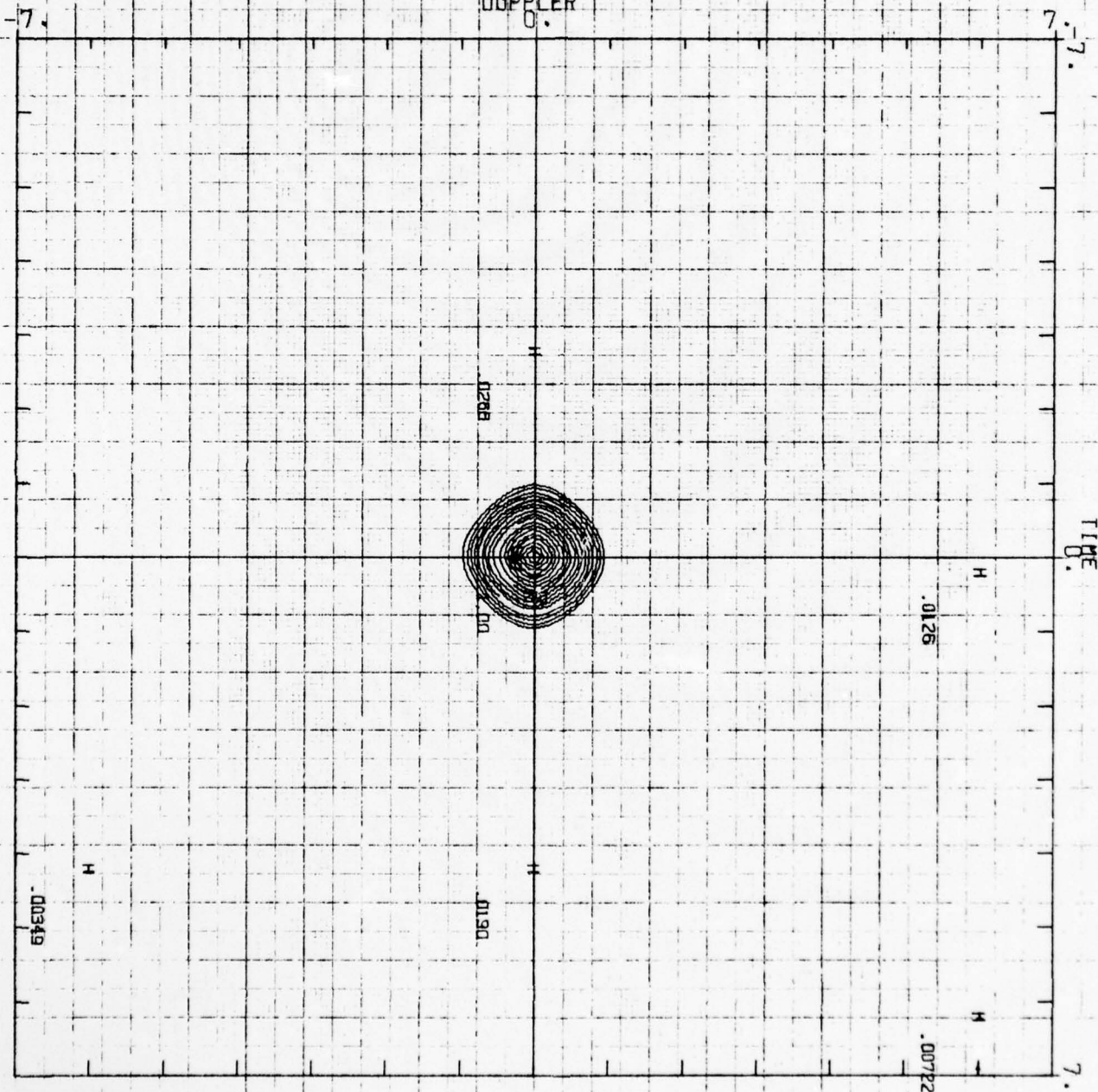
° H-119

CONTOUR FROM -1.0000 TO 1.0000
INTERVAL .5000E-01 SCALE FACTOR 1.0000

RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP

TAGSEA - Q605 --- SS = 5 , ALT = 2.2 KFT. DOWN WIND

DOPPLER

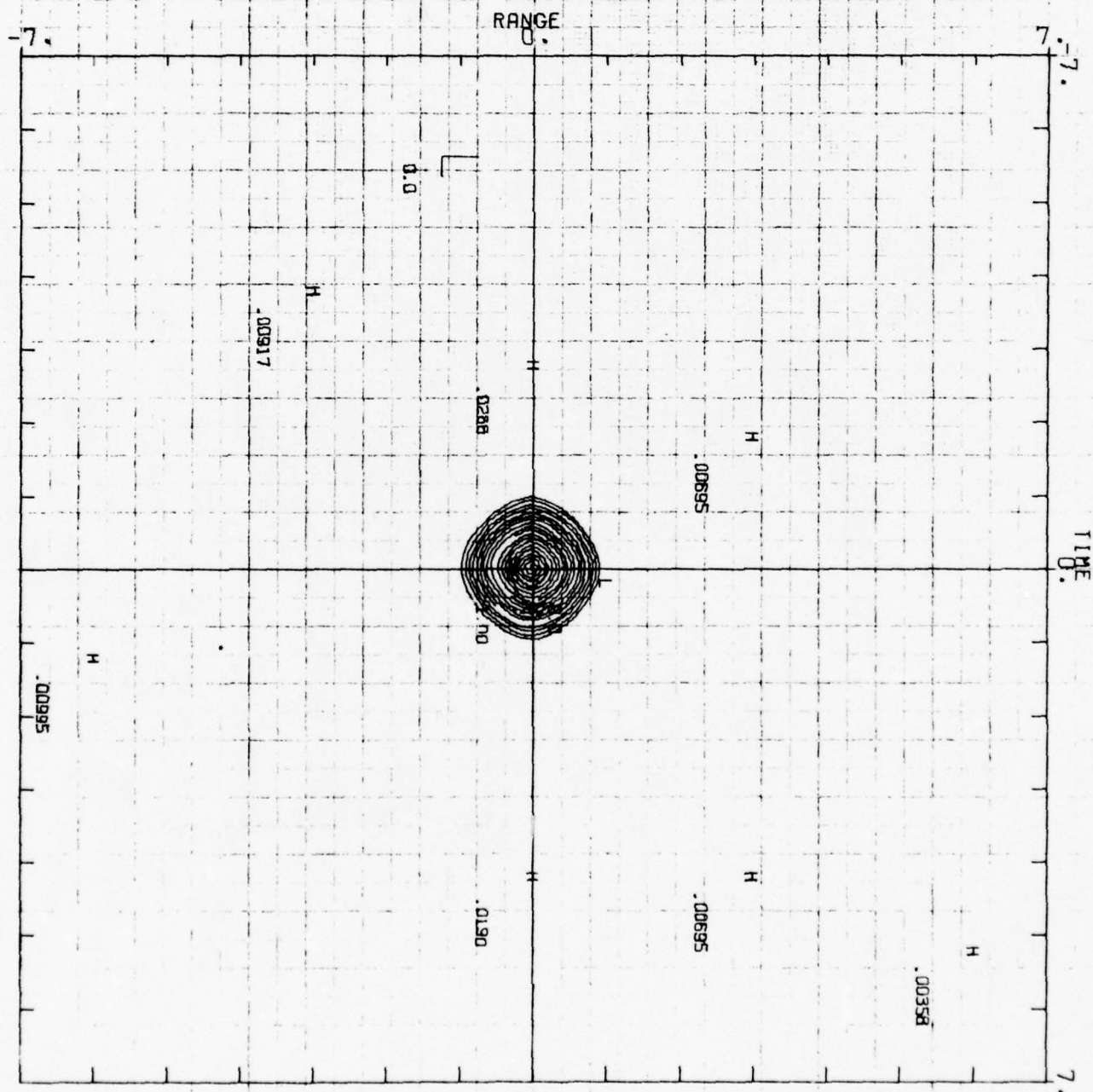


H-120

CONTOUR FROM -1.10000 TO 1.0000
INTERVAL $.60000E-01$ SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 0605 --- SS = 5 . ALT = 2.2 KFT. DOWN WIND



H-121

CONTOUR FROM -1.0000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 894.0

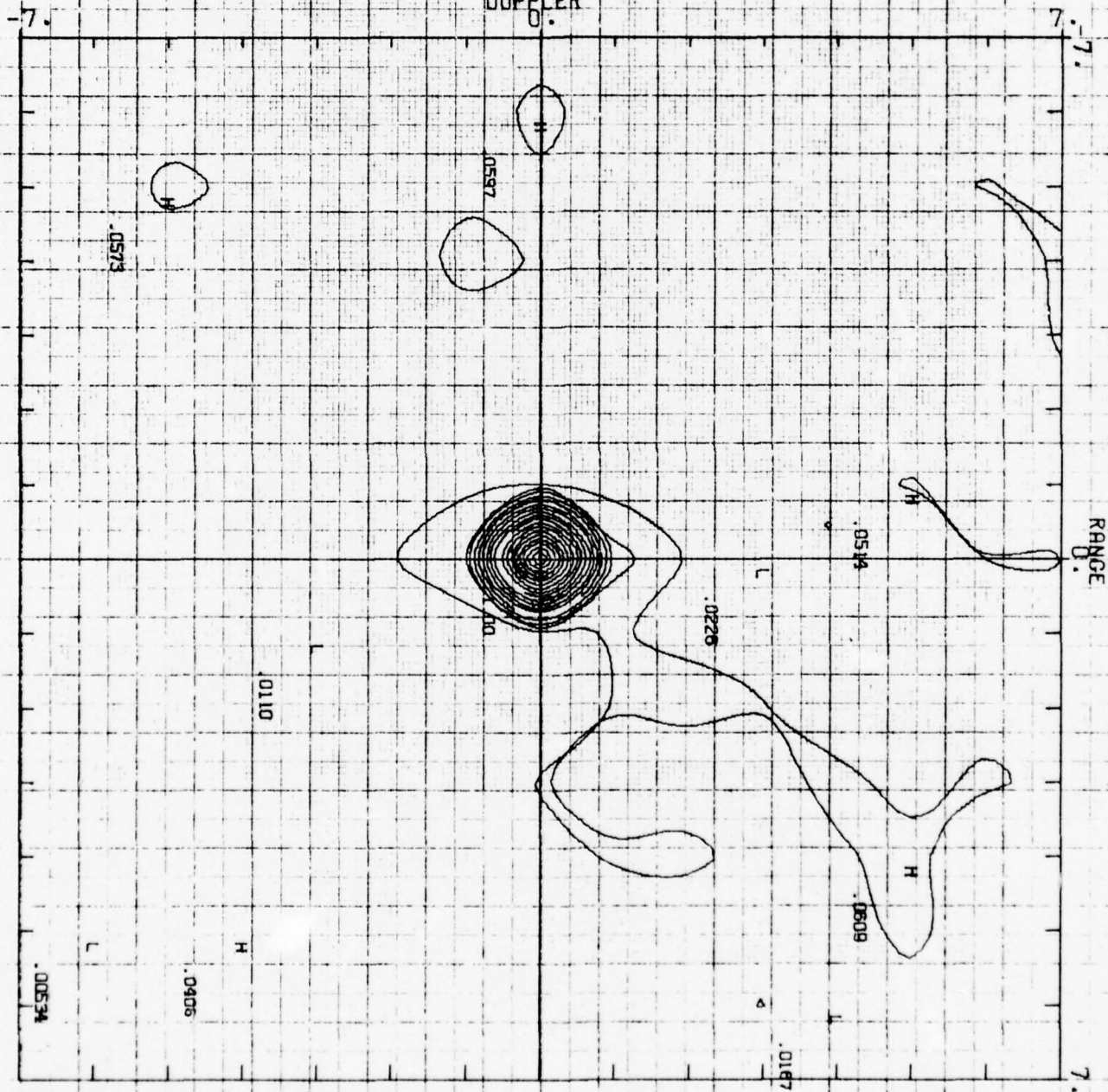
HITS GT T2 = 5689.0

TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TARGET - 0605 --- SS = 5 , ALT = 2.2 KFT, DOWN WIND

DOPPLER



CONTOUR FROM -.10000 TO 1.0000 TELE BAY THRESHOLD LEVEL IS 119

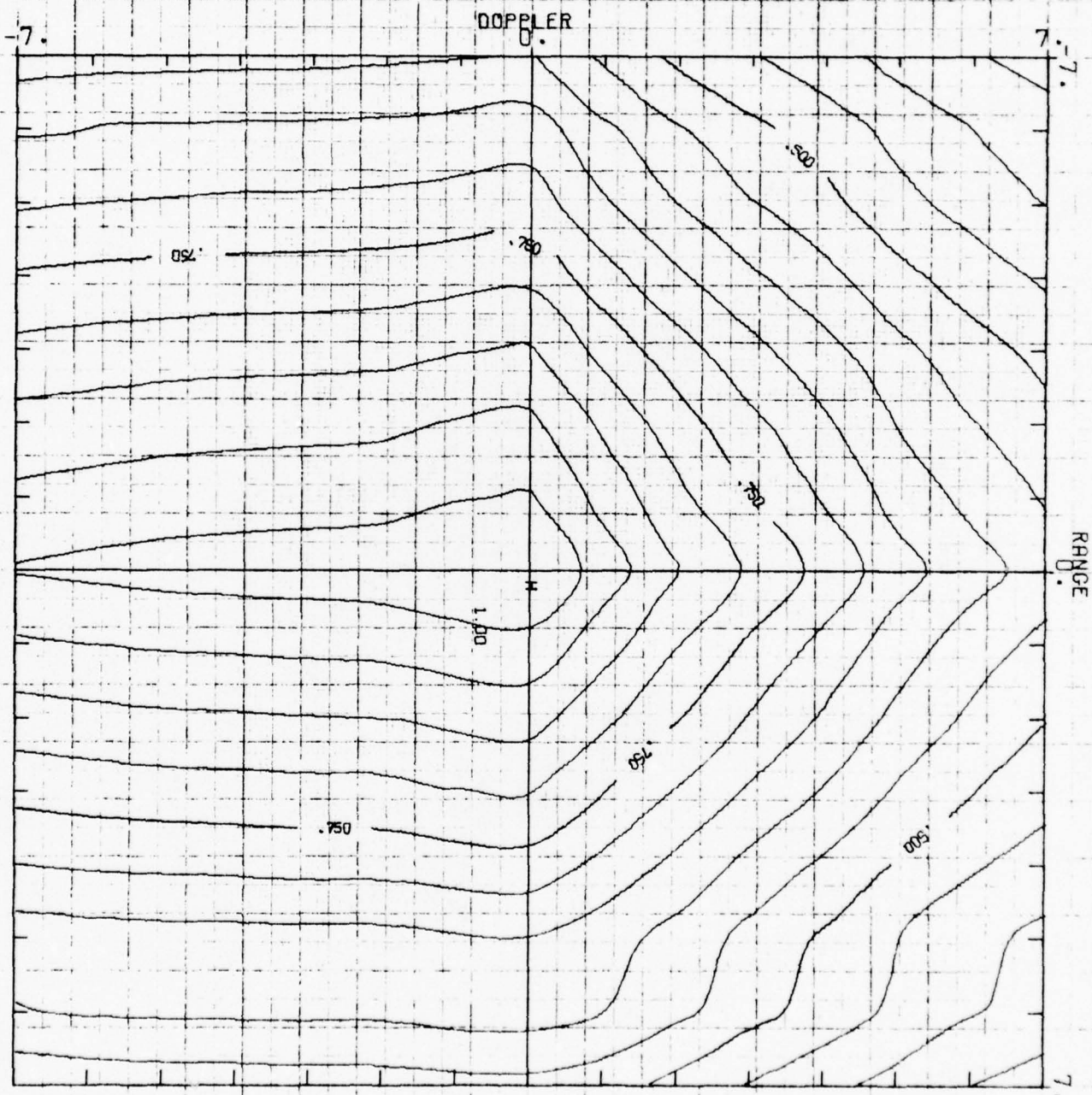
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 894.0

ARRAY TOT= 195170.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

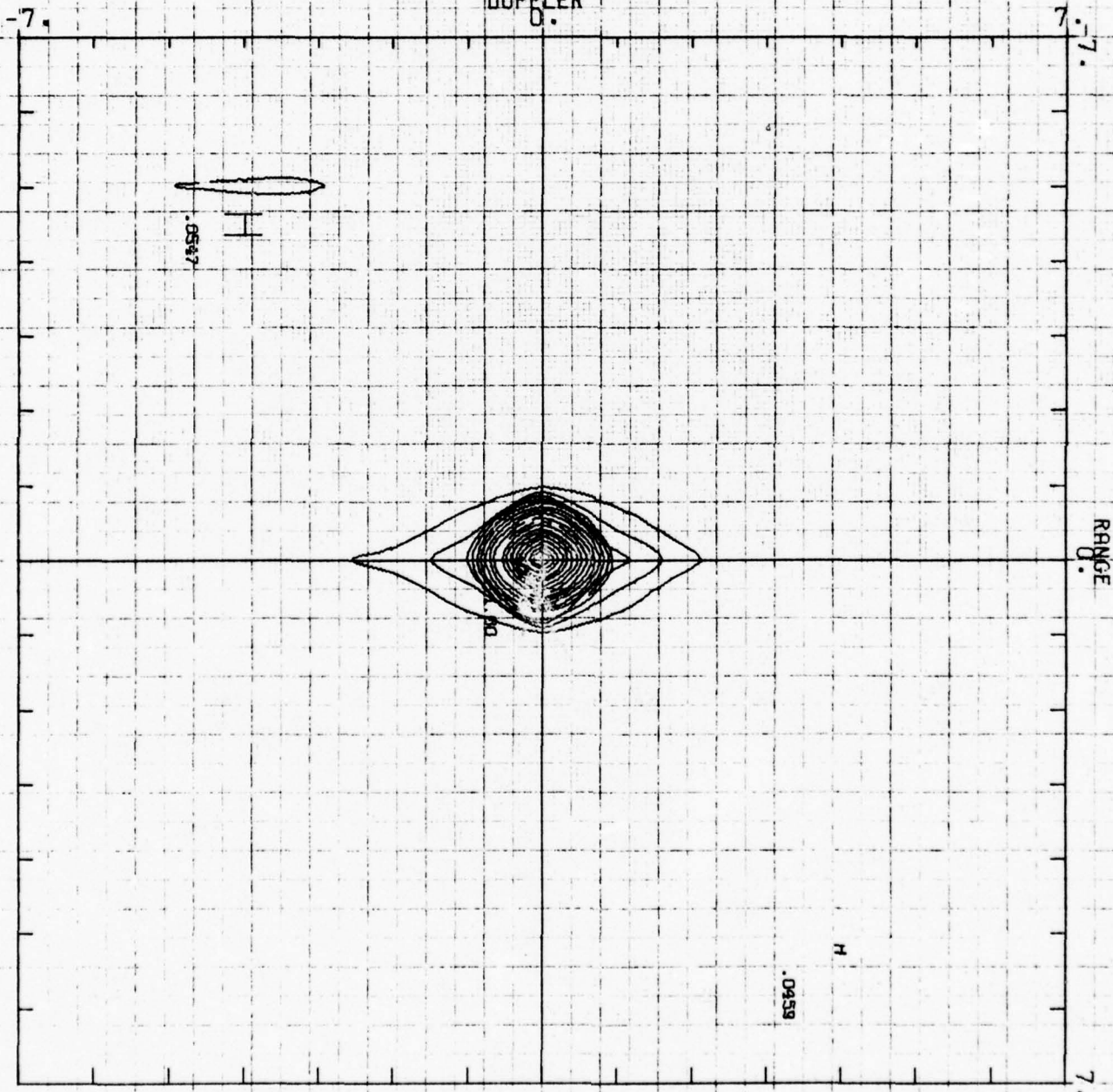
TAGSEA - 0605 --- SS = 5 , ALT = 2.2 KFT. DOWN WIND



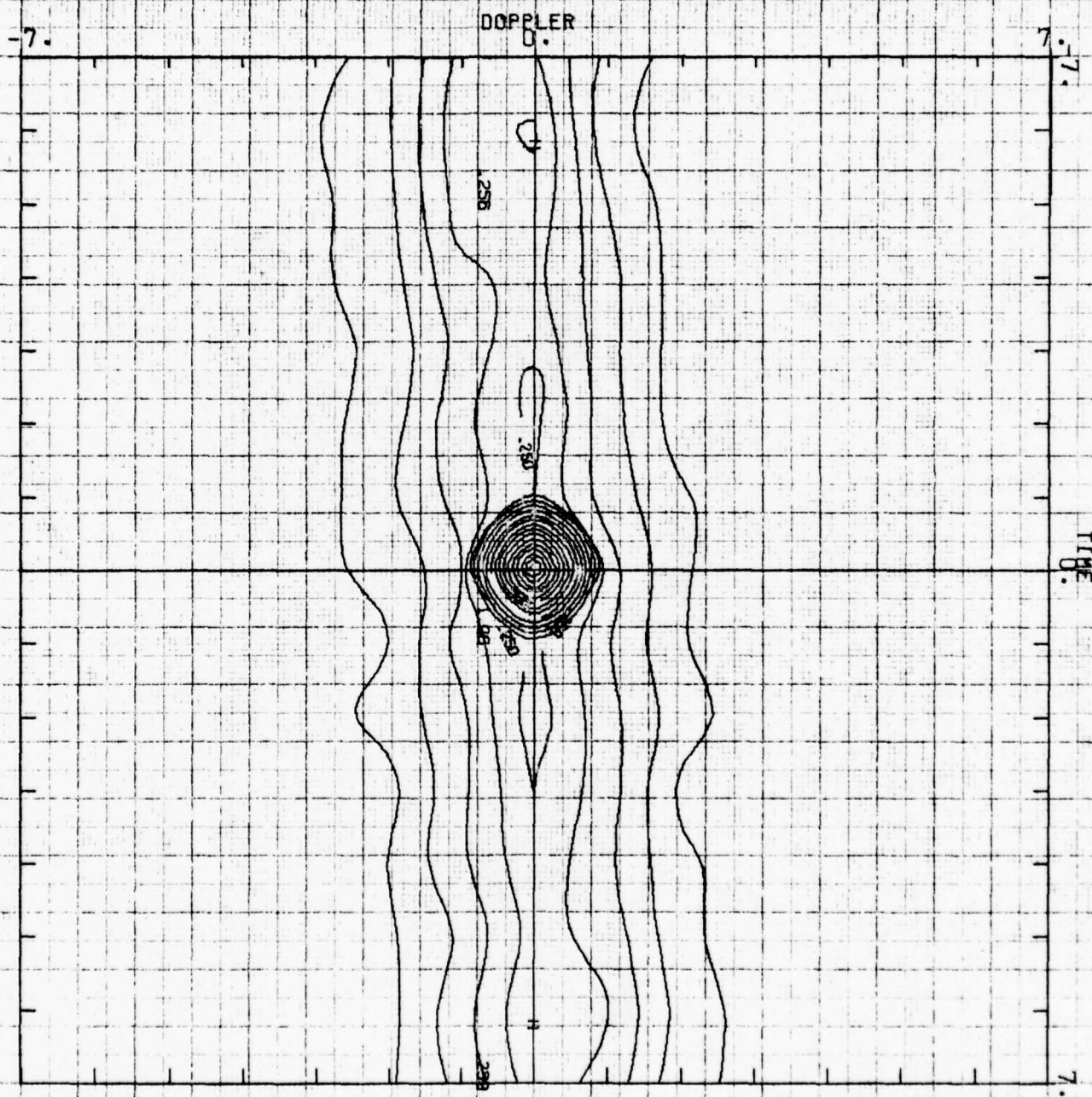
CONTOUR FROM -1.0000 TO 1.0000
INTERVAL .60000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0701 --- SS = 5. ALT = 1.1 KFT. UP WIND

DOPPLER
0.

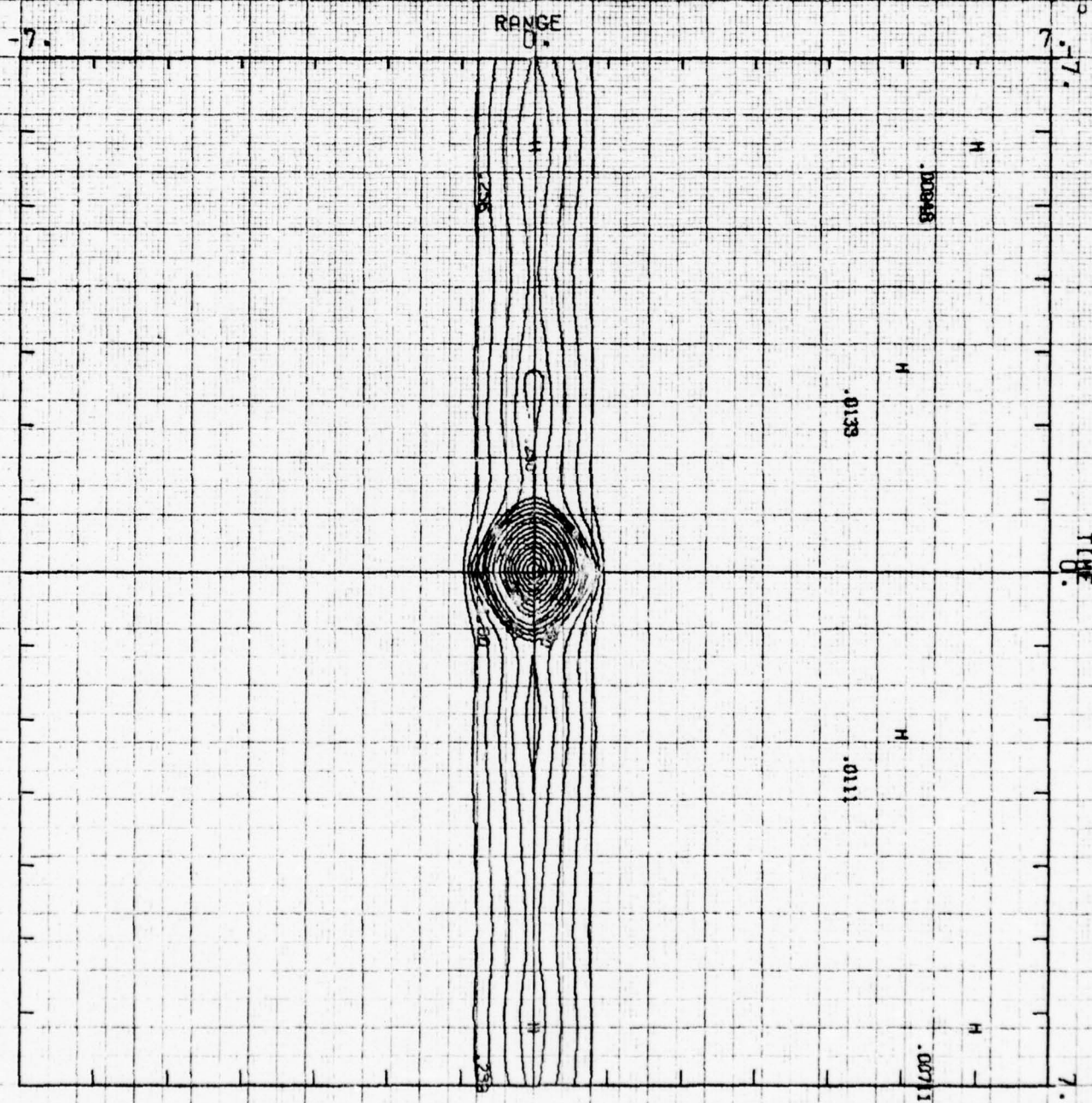


RELATIVE	RANGE	0	CONDITIONAL	PROBABILITY MAP
TAGSEA - 0701	---	SS = 5.	ALT = 1.1 KFT.	UF WIND



CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0701 --- SS = 5. ALT = 1.1 KFT. UP WIND



H-126

HITS GT T2 = 9128.0

INTERVAL	.50000E-01	SCALE FACTOR	1.0000
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HITS GT T1 = 485.0

HITS GT T2 = 9128.0

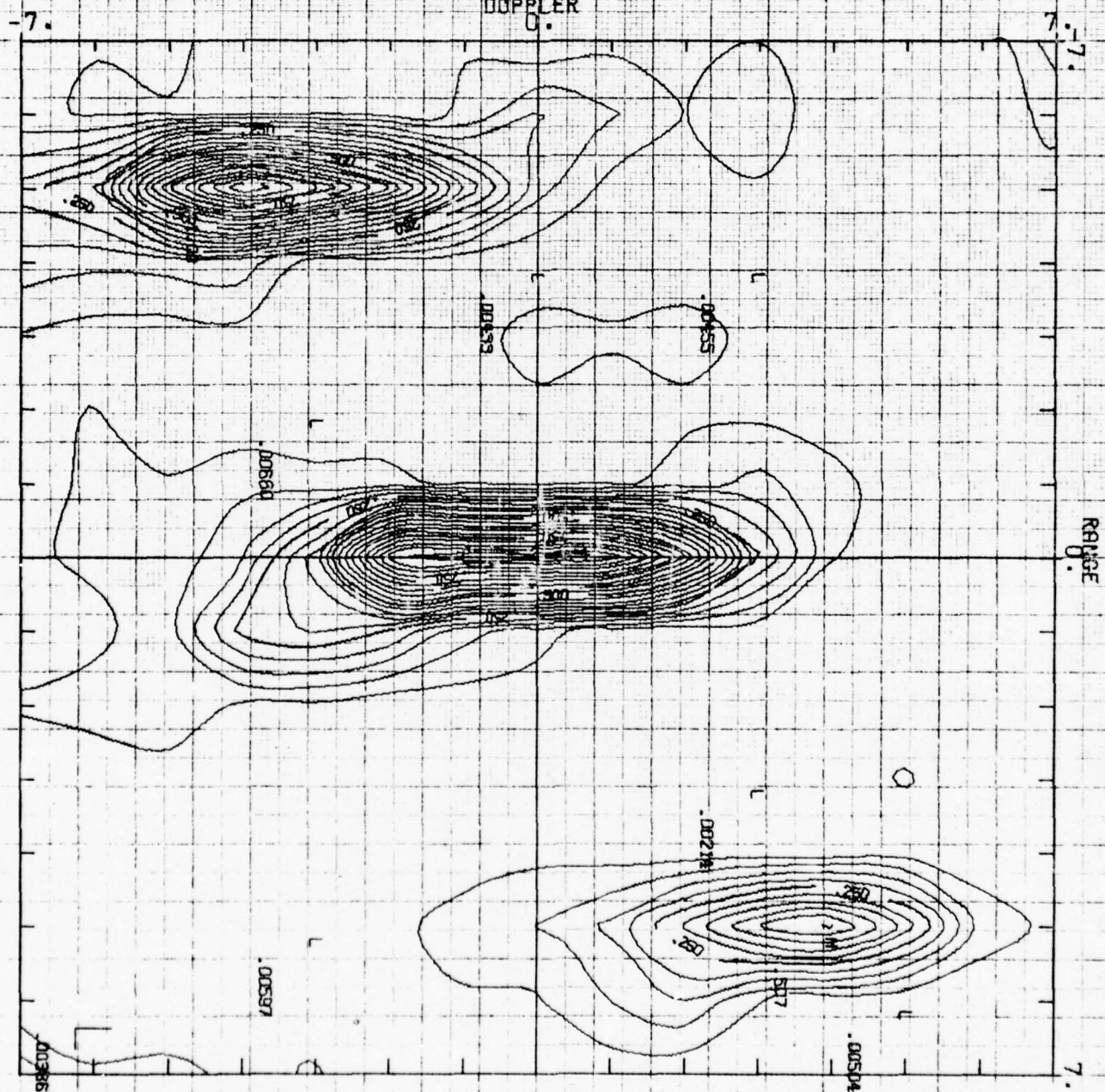
TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSER - 0701 --- SS = S, ALT = 1.1 KFT.

UP WIND

DOPPLER

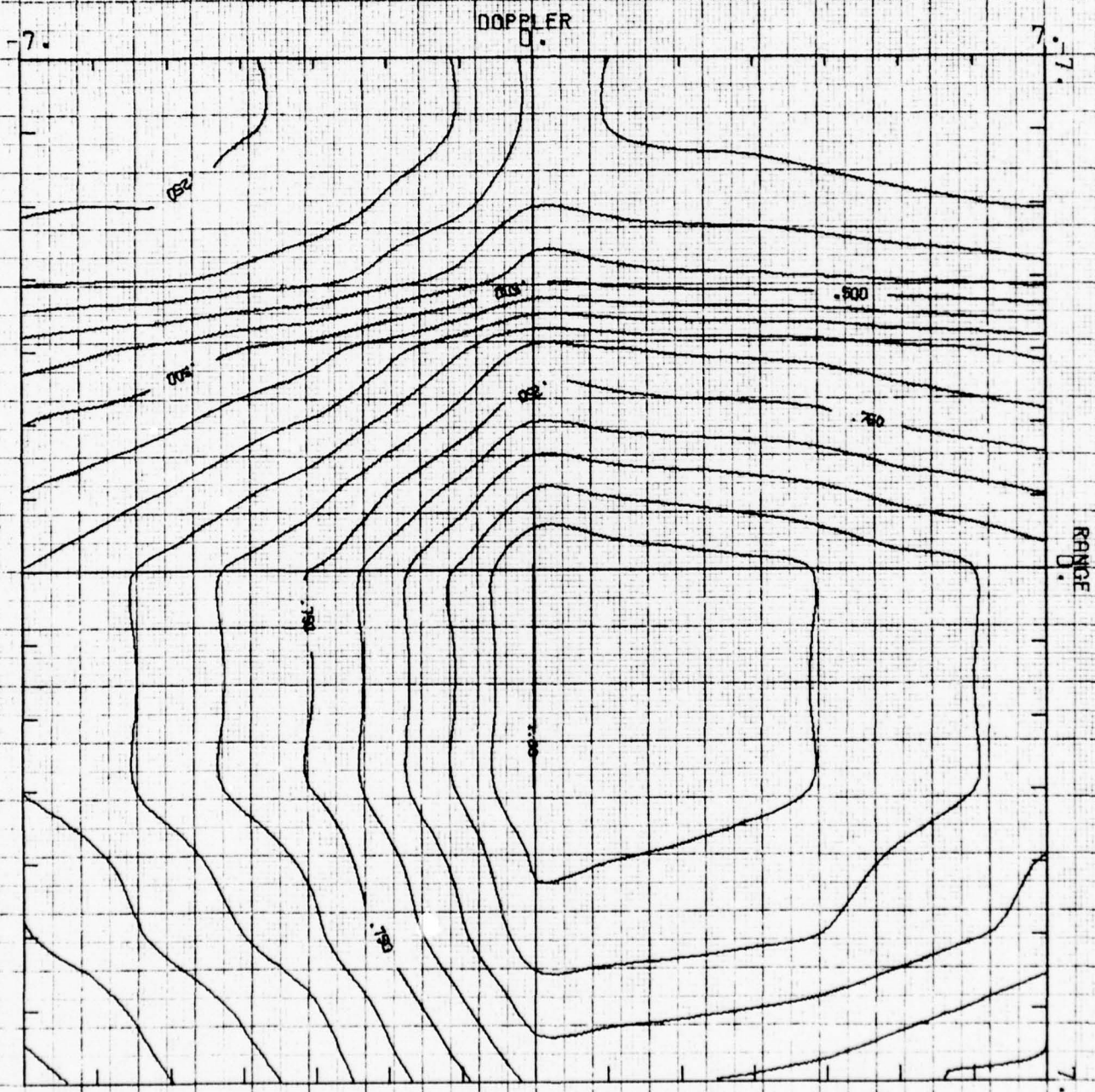


CONTOUR FROM -1.0000 TO 1.0000 TELE RAY THRESHOLD LEVEL IS 151
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 485.0
ARRAY TOT= 71057.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0701 --- SS = 5. ALT = 1.1 KFT. UP WIND

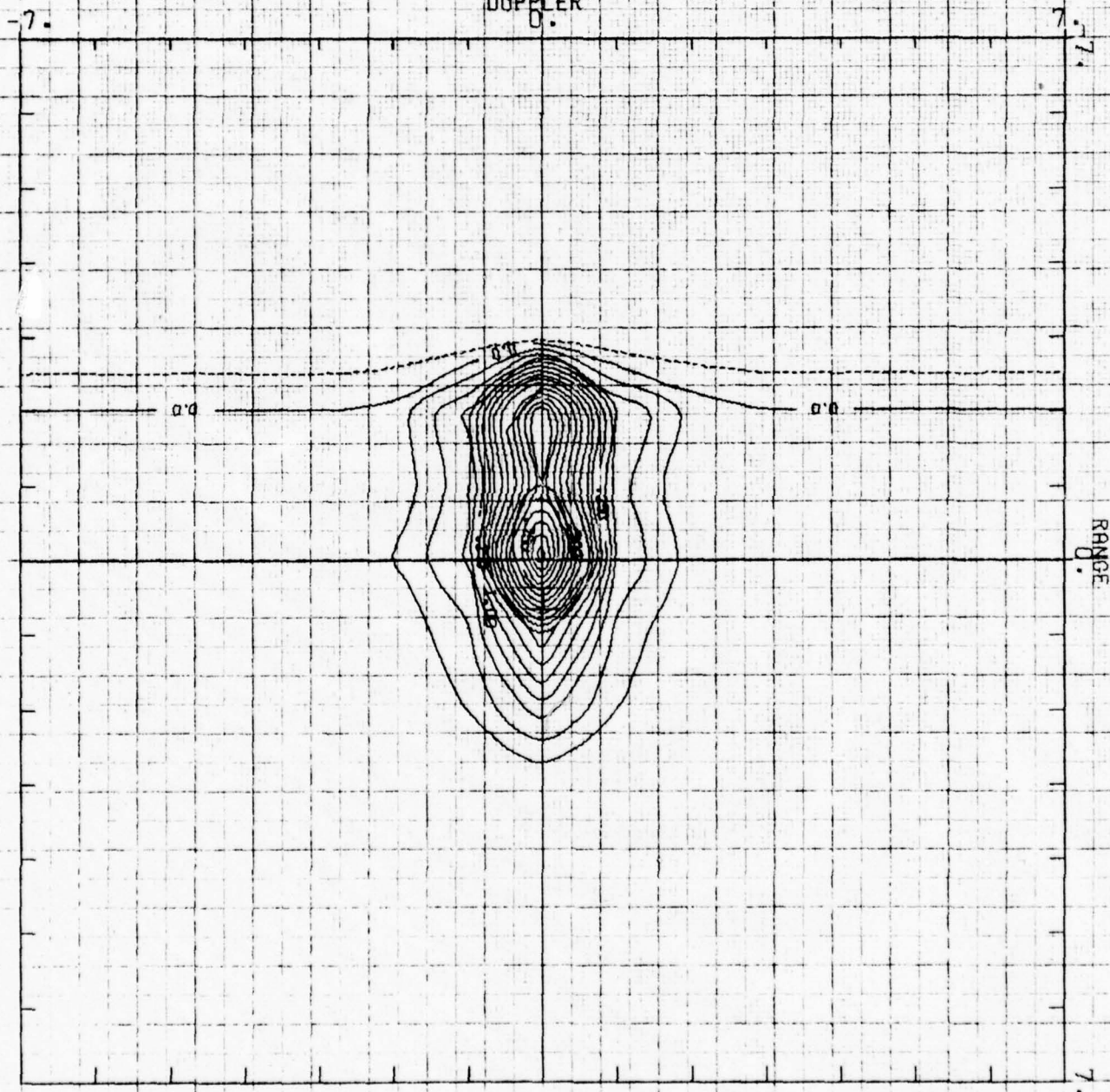


CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-03 SCALE FACTOR 1.0000

RELATIVE TIME 0. CONDITIONAL PROBABILITY MAP

TAGSEA - 0703 --- SS = 5, ALT = 1.1 KFT, CROSS WIND

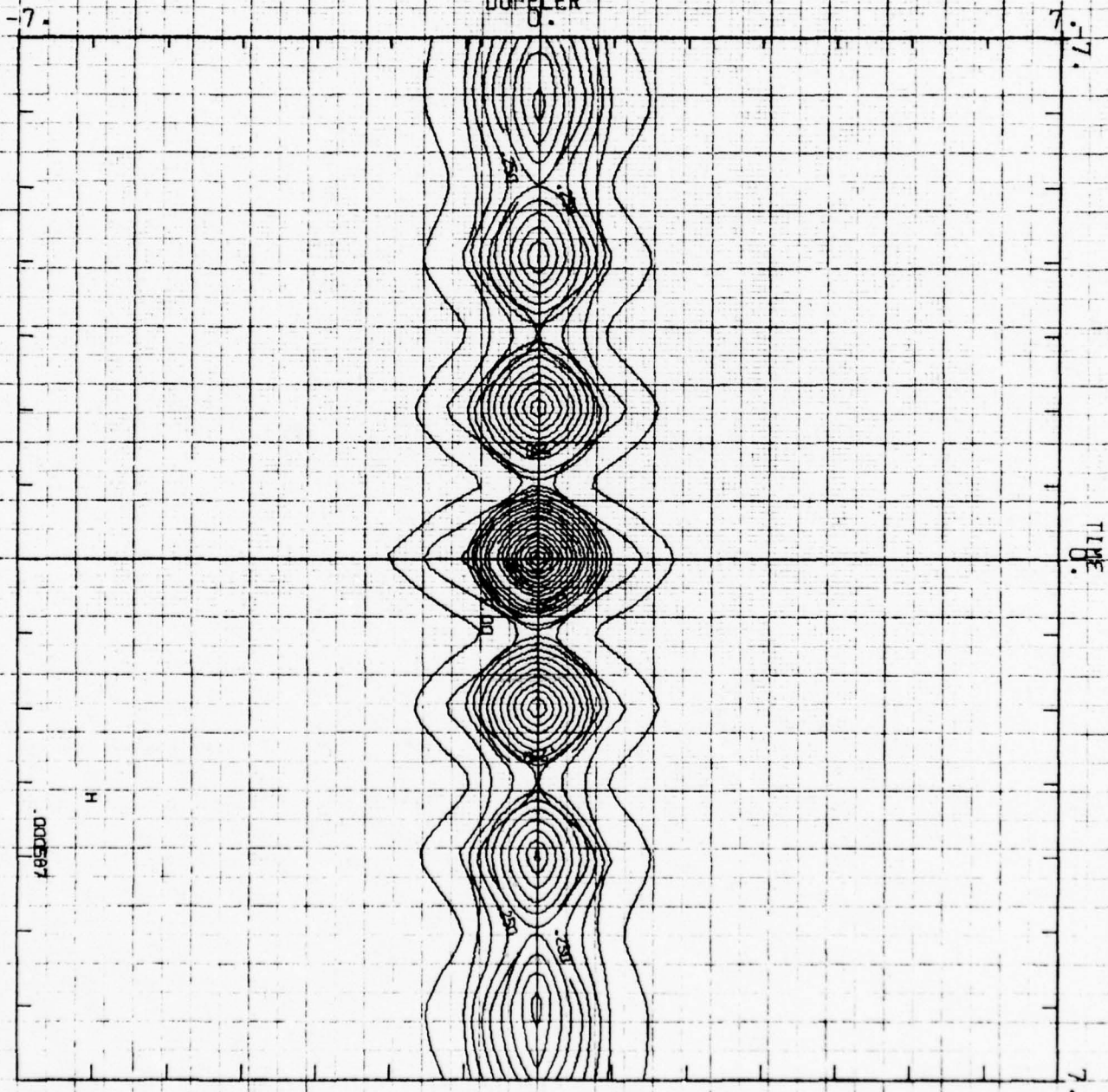
DOPPLER
0.



INTERVAL .50000E-01 SCALE FACTOR 1.0000

TAGSEA - 0703 --- SS = 5, ALT = 1.1 KFT, CROSS WIND

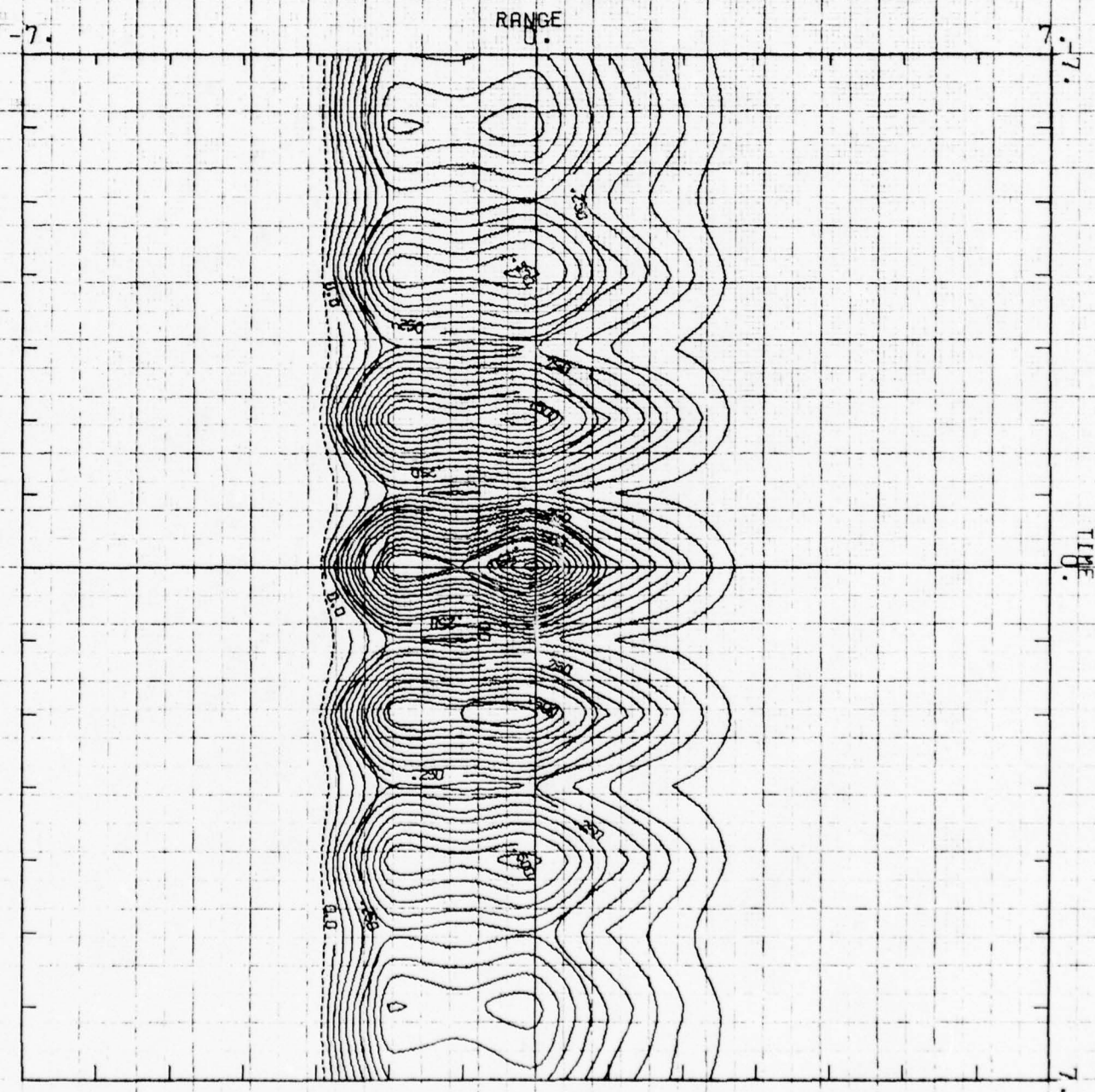
DOPPLER



H-130

CONTOUR FROM -1.0000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0703 --- SS = 5, ALT = 1.1 KFT. CROSS WIND



CONTOUR FROM -1.0000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 1764.0

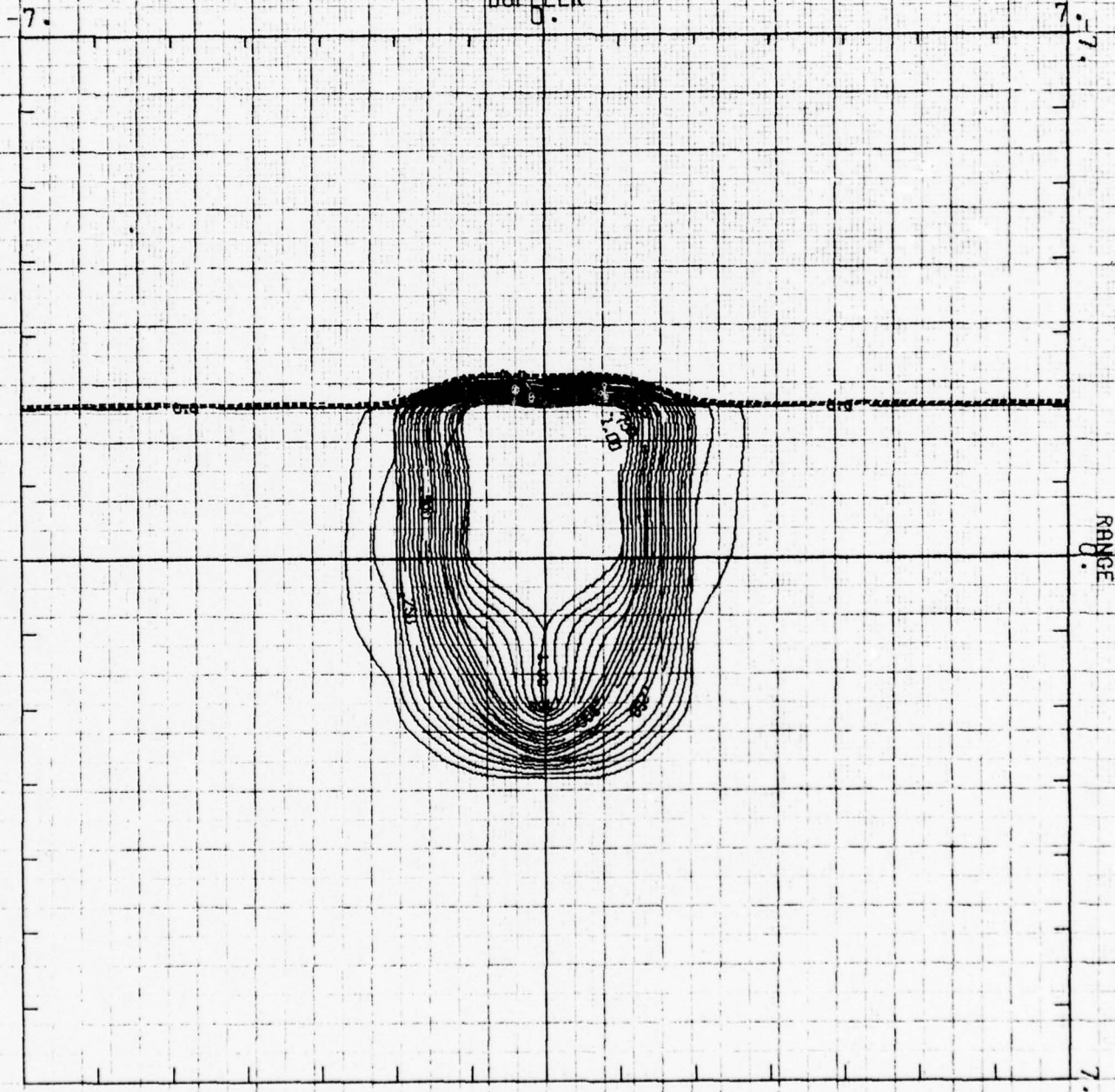
HITS GT T2 = 38698.0

TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0703 --- SS = 5, ALT = 1.1 KFT, CROSS WIND

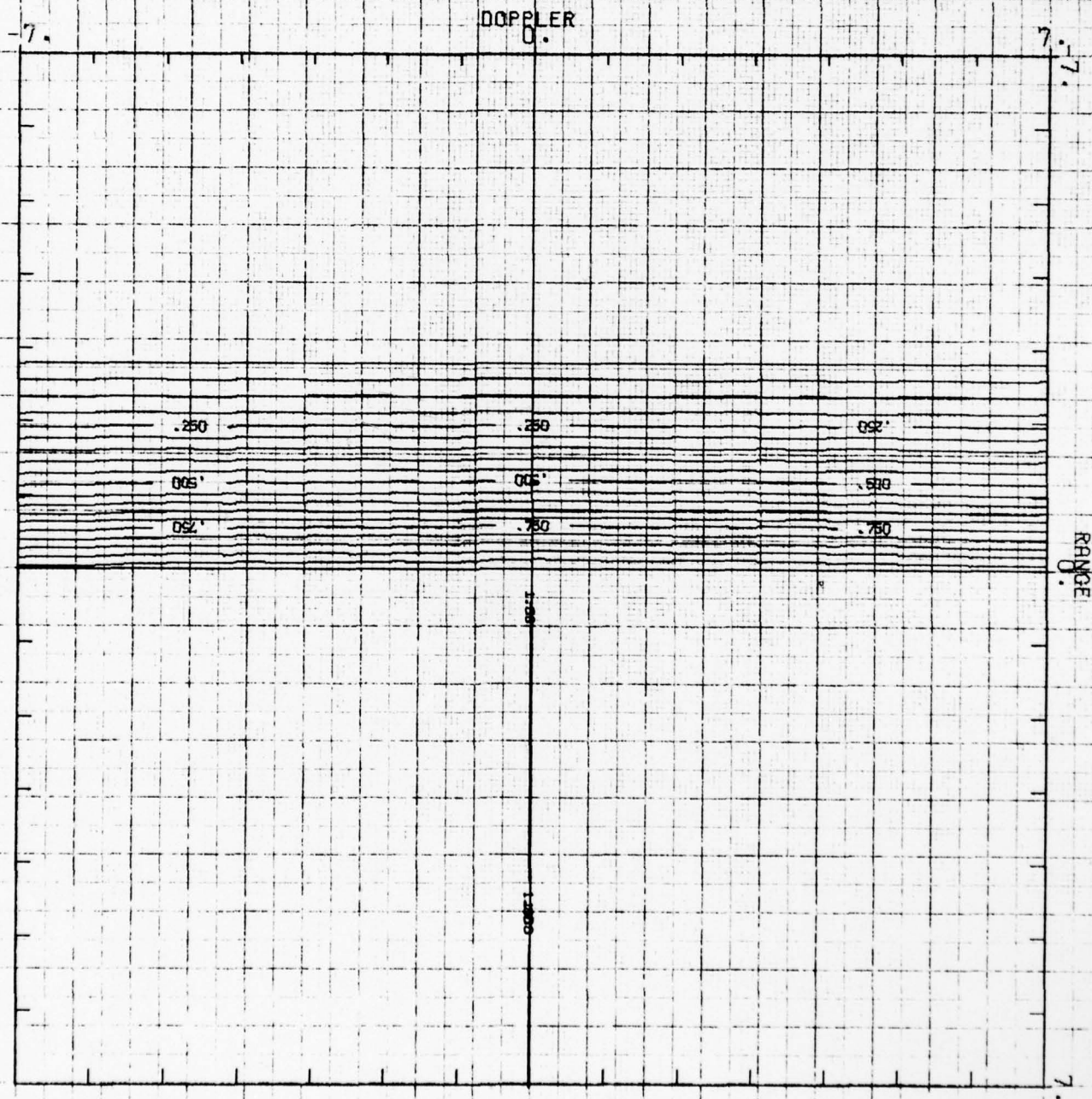
DOPPLER



CONTOUR FROM -.10000 TO 1.0000 TELE BAY THRESHOLD LEVEL IS 229
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 1764.0
ARRAY TOT= 228803.0

NORMALIZATION ARRAY CONDITIONAL PROBABILITY MAP

TAGSEA - 0703 --- SS = 5, ALT = 1.1 KFT, CROSS WIND

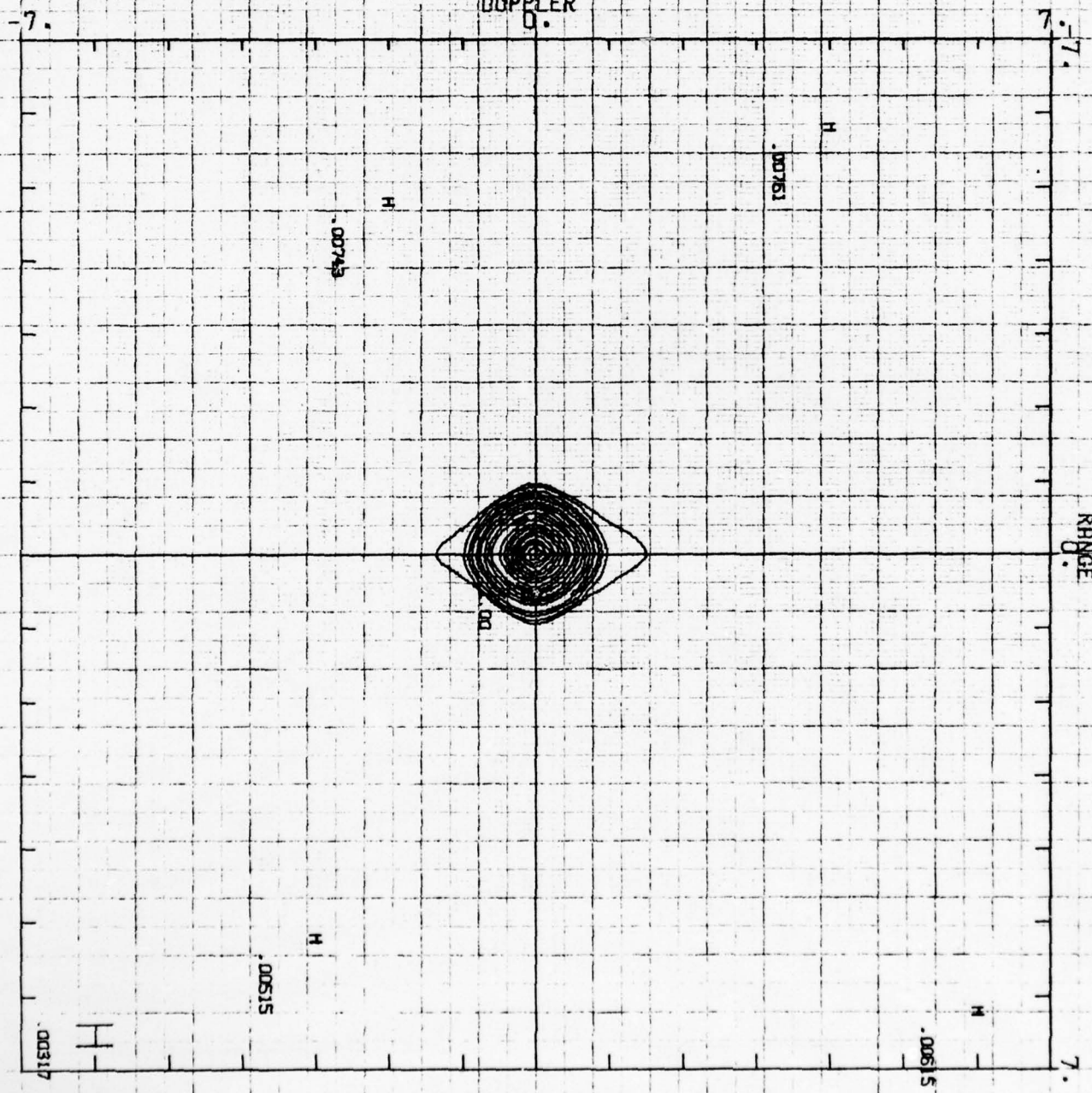


CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP

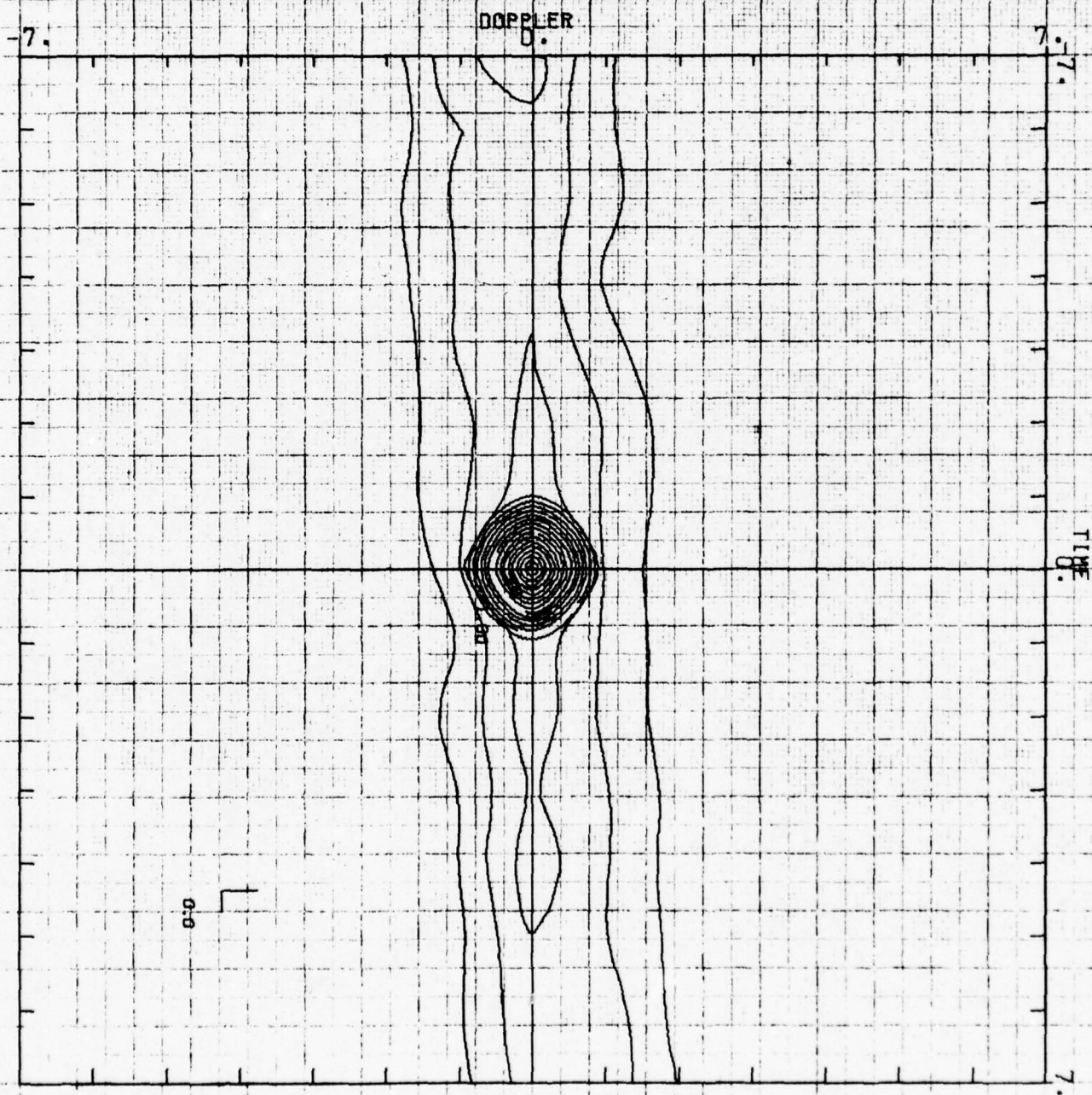
TAGSEA - 0704 --- SS = 8, ALT = 2.2 KFT, UP WIND

DOPPLER
0.



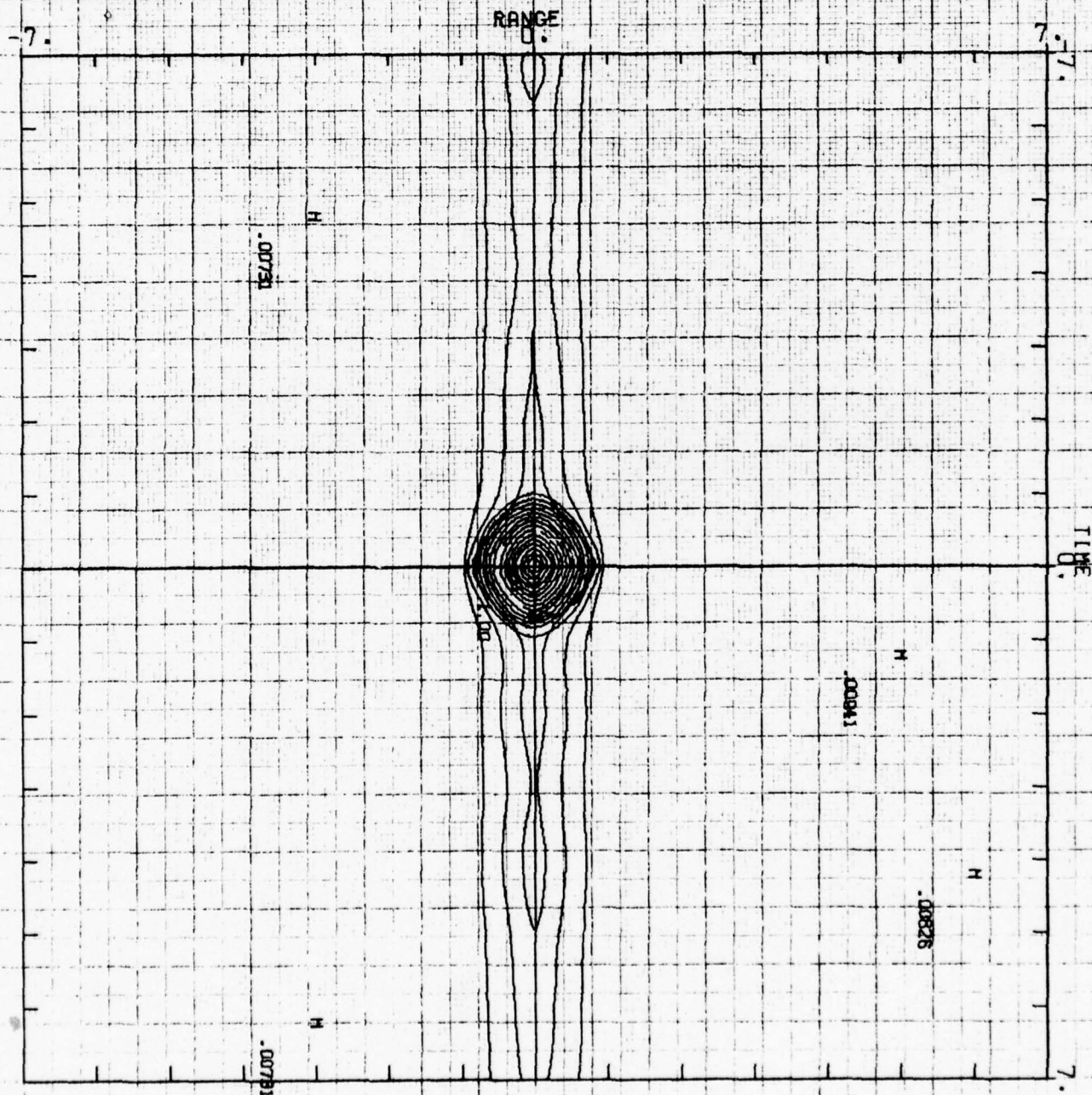
CONTOUR FROM .10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0704 --- SS = 8. ALT = 2.2 KFT. UP WIND



CONTOUR FROM -1.0000 TO 1.0000
INTERVAL .60000E-01 SCALE FACTOR 5.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSER - 0704 --- SS = 8, ALT = 2.2 KFT. UP WIND



CONTOUR FROM -.10000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 628.0

HITS GT T2 = 7791.0

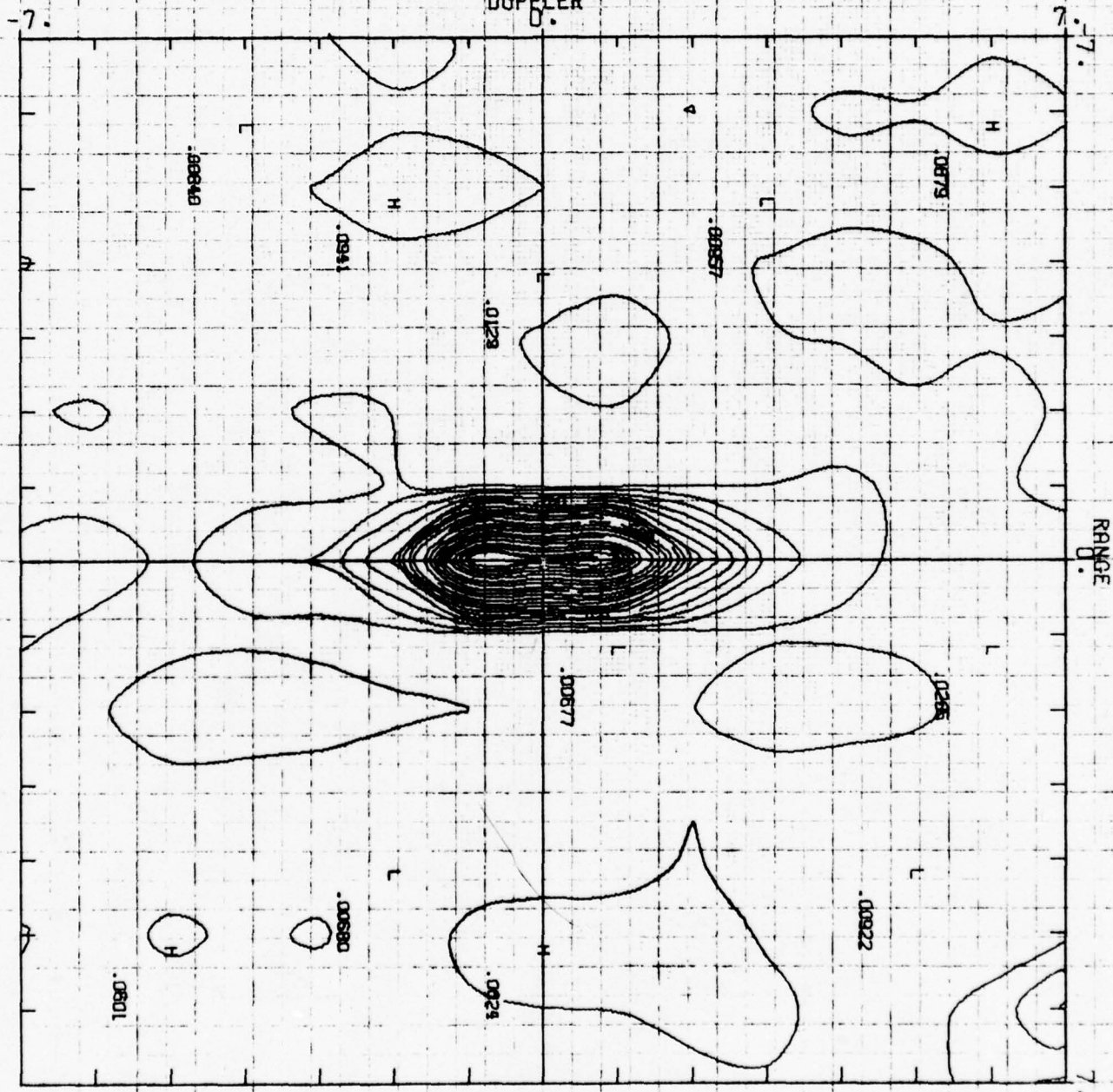
TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0704 --- SS = 5. ALT = 2.2 KFT.

UP WIND

DOPPLER
0.

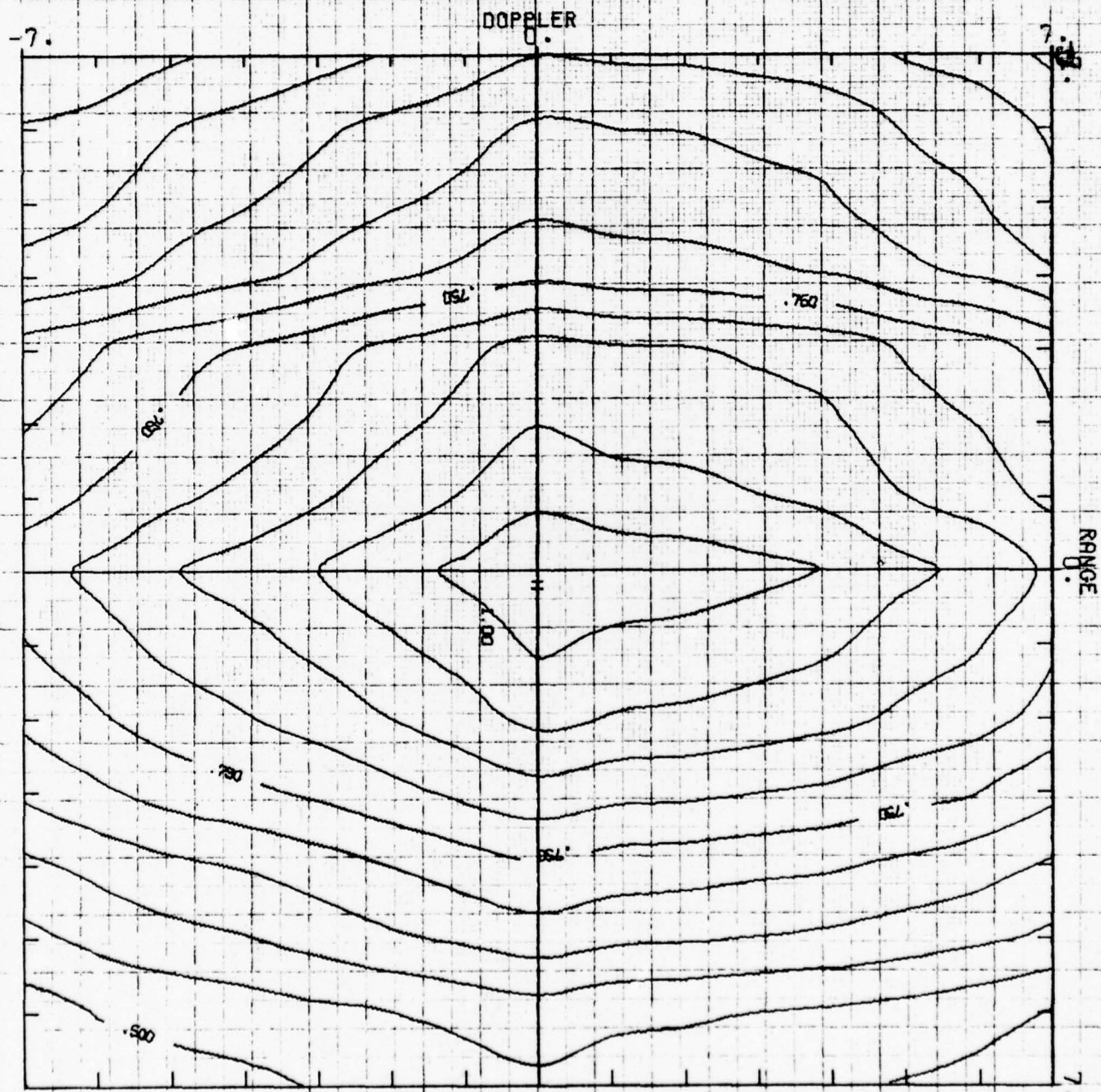


CONTOUR FROM $\pm .10000$ TO 1.0000 TELE BAY THRESHOLD LEVEL IS 128
INTERVAL $.60000E-01$ SCALE FACTOR 1.0000 PEAK(0,0) = 628.0
ARRAY TOT = 99693.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0704 --- SS = 5. ALT = 2.2 KFT. UP WIND

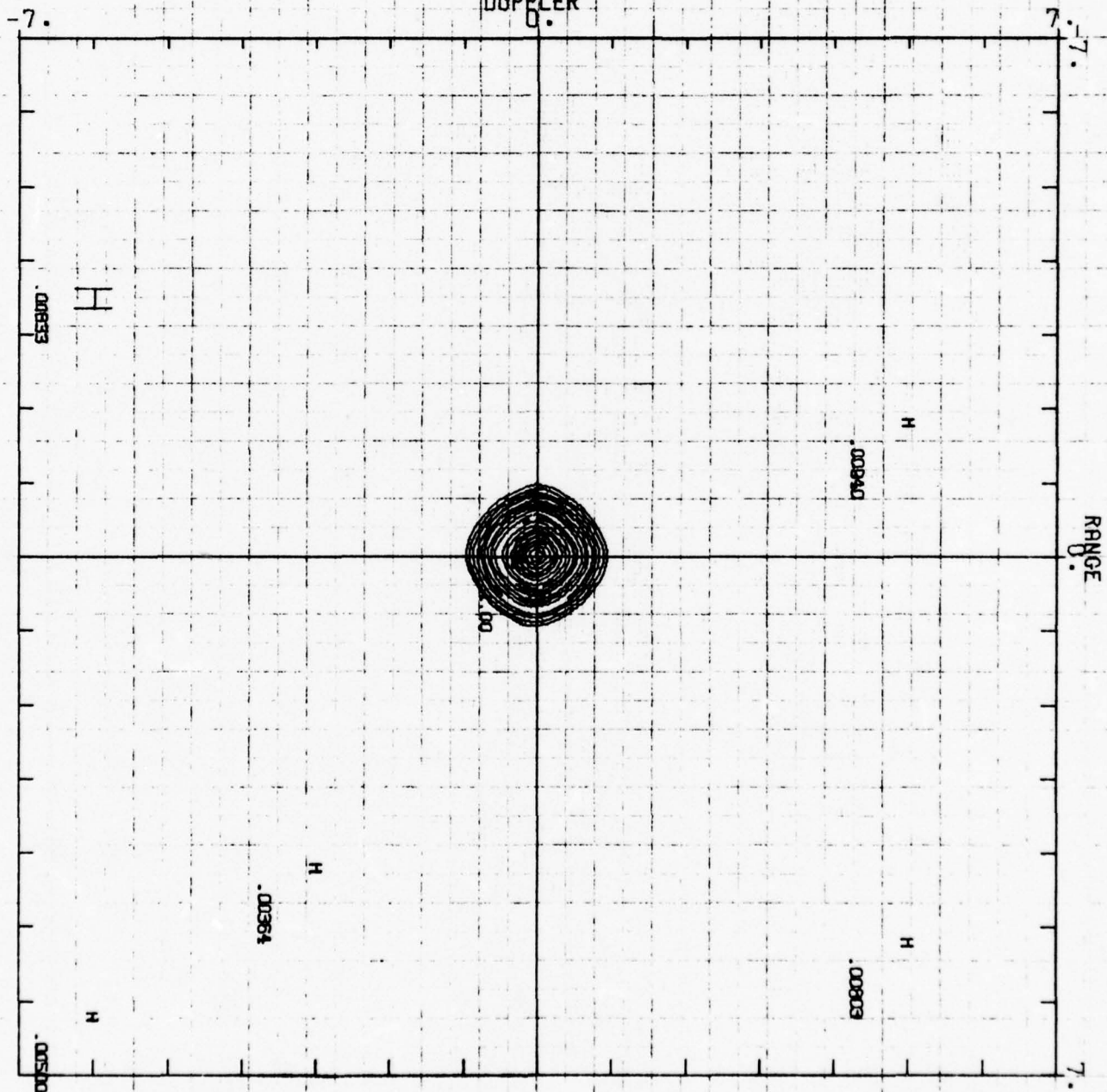


CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

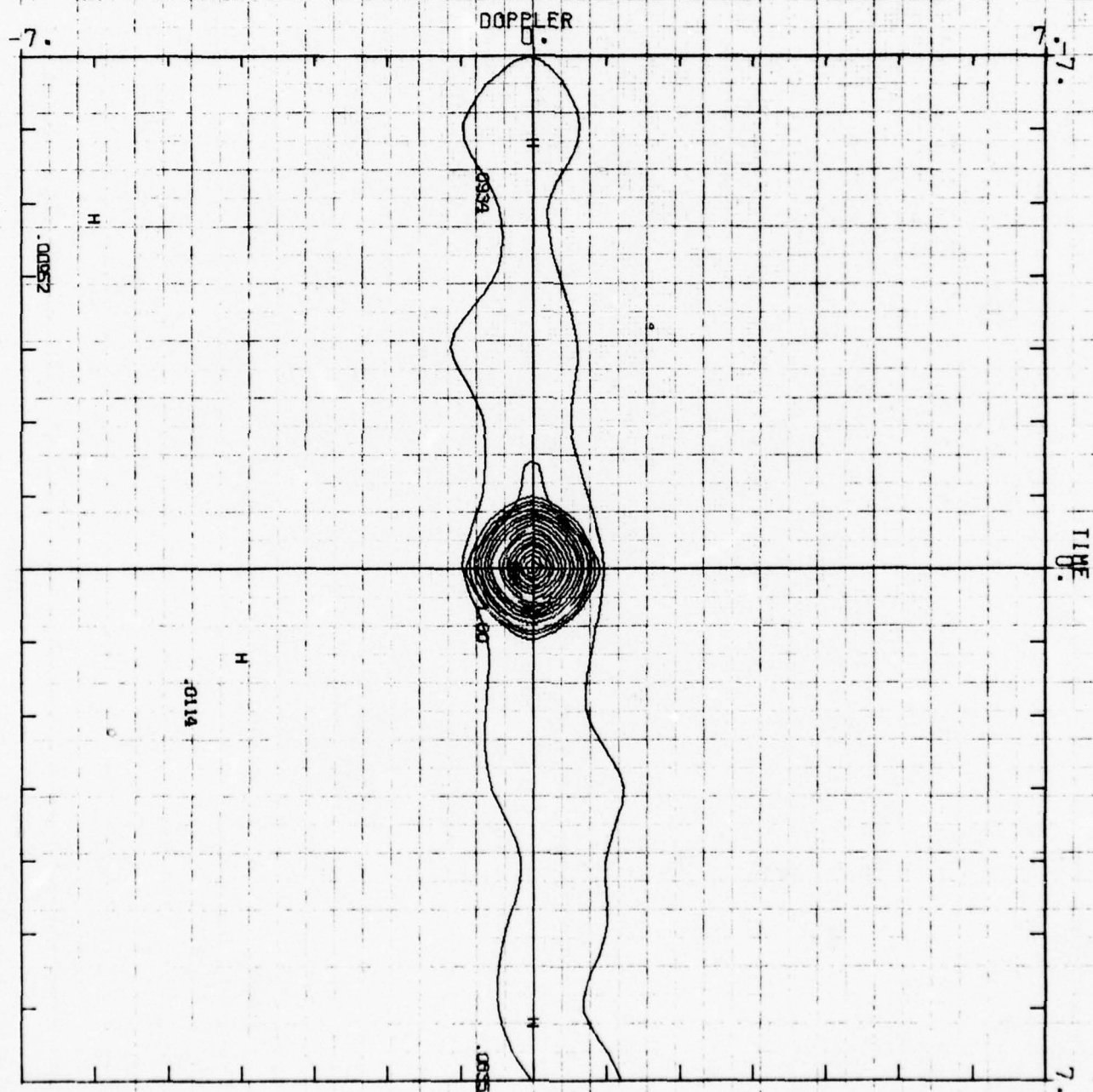
RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 0707 --- SS = 5. ALT = 3.3 KFT. UP WIND

DOPPLER
0.



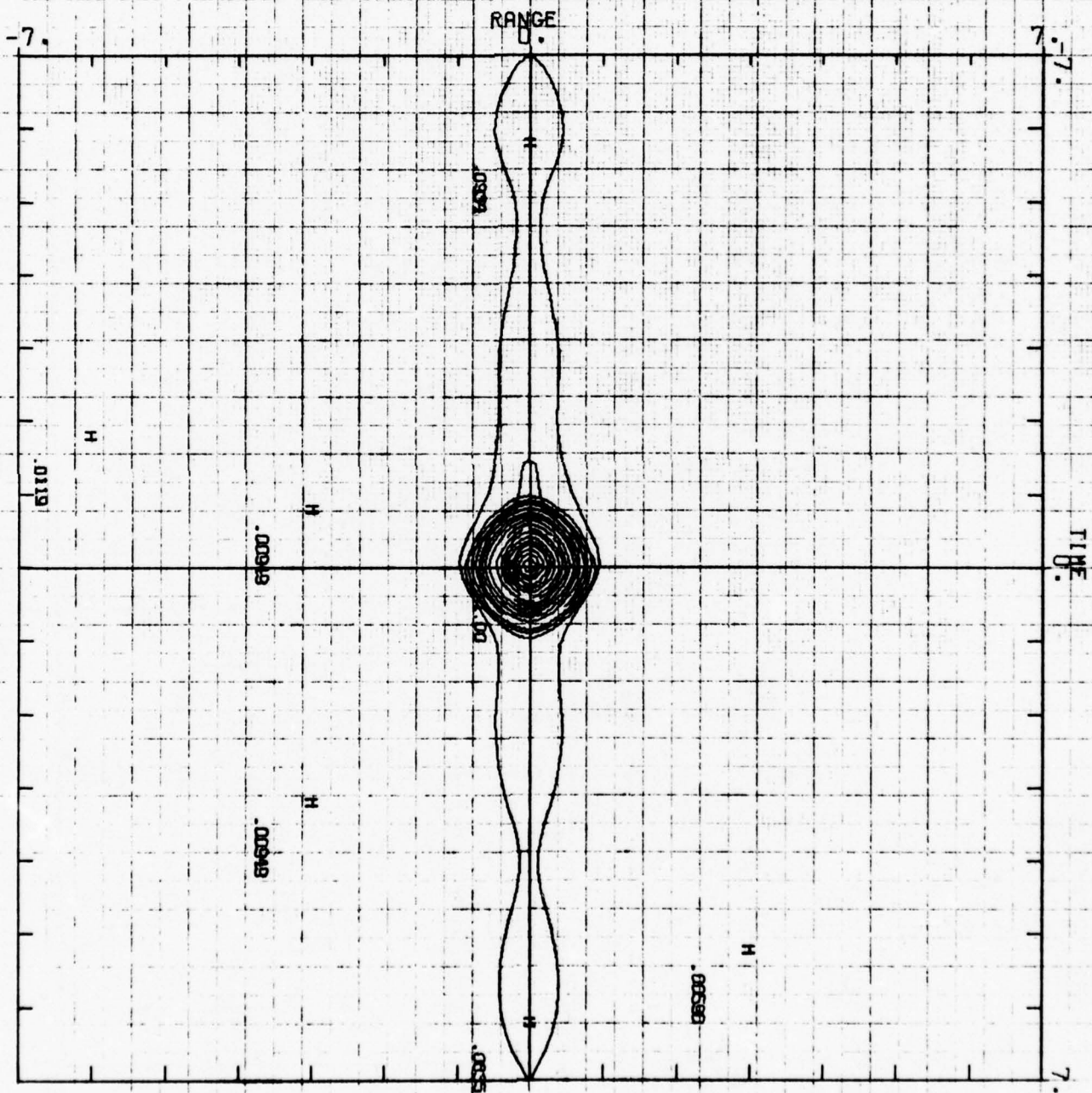
RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 0707 --- SS = 5. ALT = 3.3 KFT. UP WIND



CONTOUR FROM ± 1.0000 TO 1.0000
INTERVAL $.50000E-01$ SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 0707 --- SS = 5. ALT = 3.3 KFT. UP WIND



H-141

CONTOUR FROM -.10000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 407.0

HITS GT T2 = 9128.0

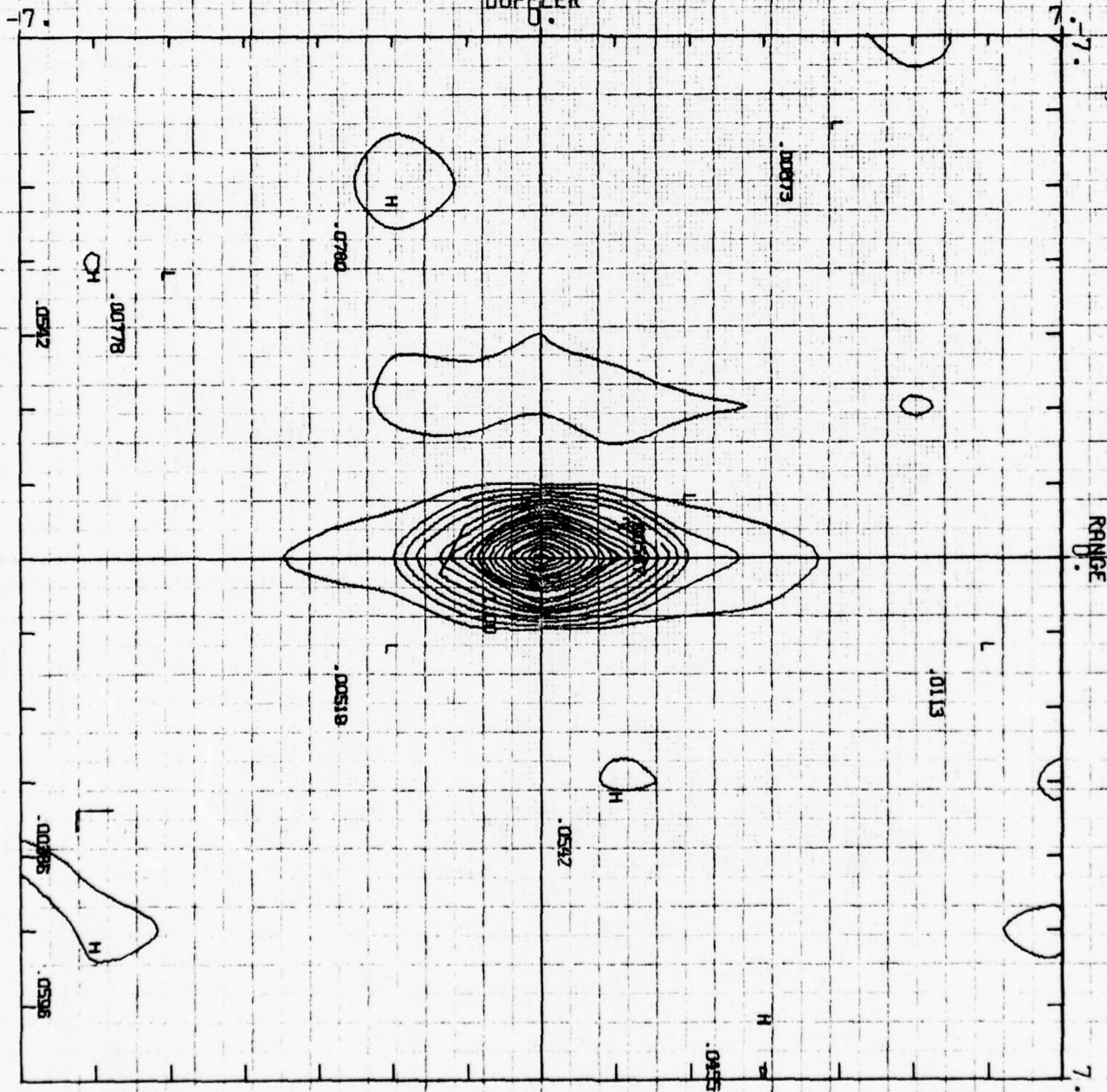
TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 0707 --- SS = 5. ALT = 3.3 KFT.

UP WIND

DOPPLER



H-142

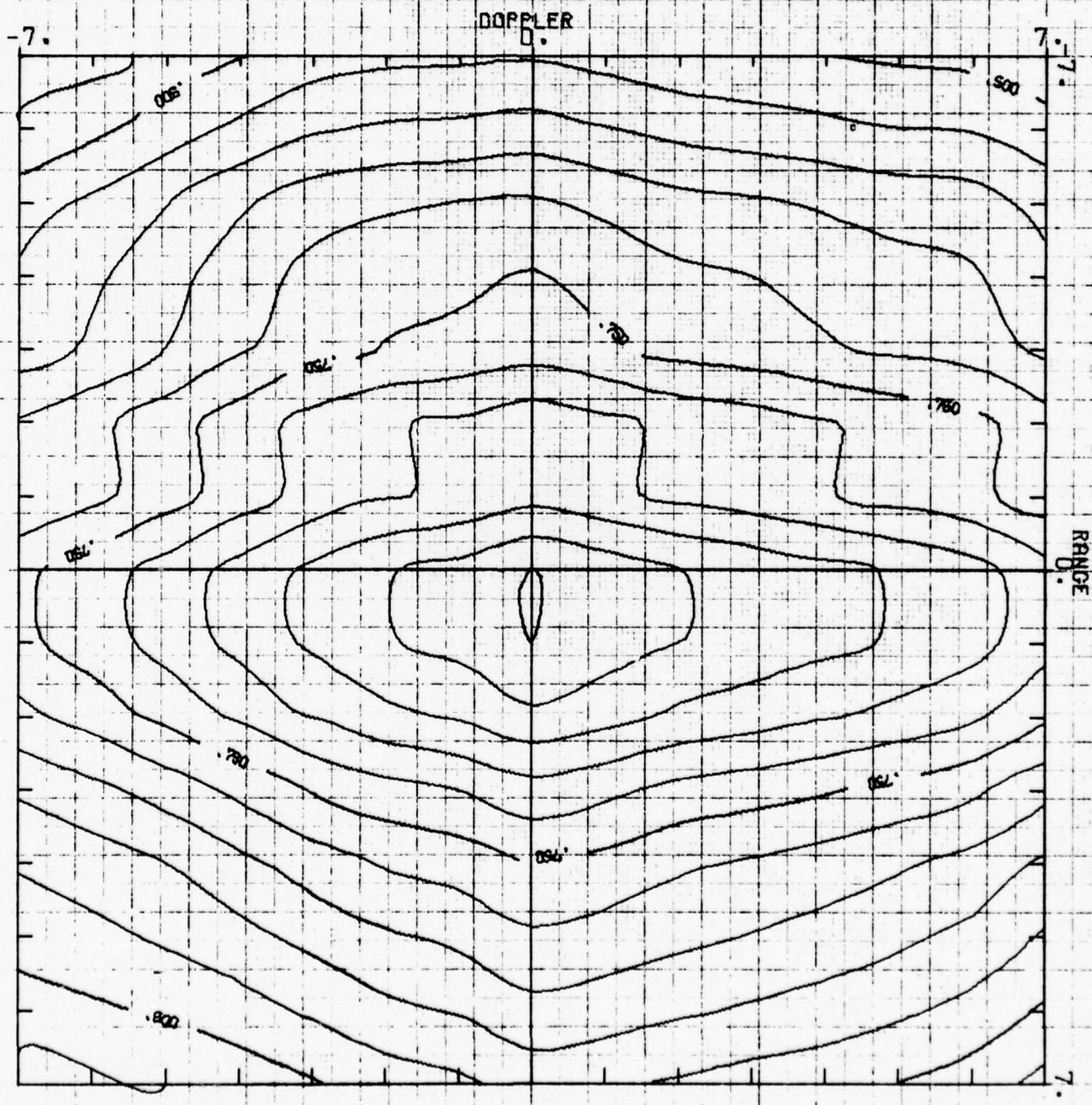
CONTOUR FROM -.10000 TO 1.0000 TELE RAY THRESHOLD LEVEL IS 109

INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0.0)= 407.0
ARRAY TOT= 69095.0

NORMALIZATION ARRAY

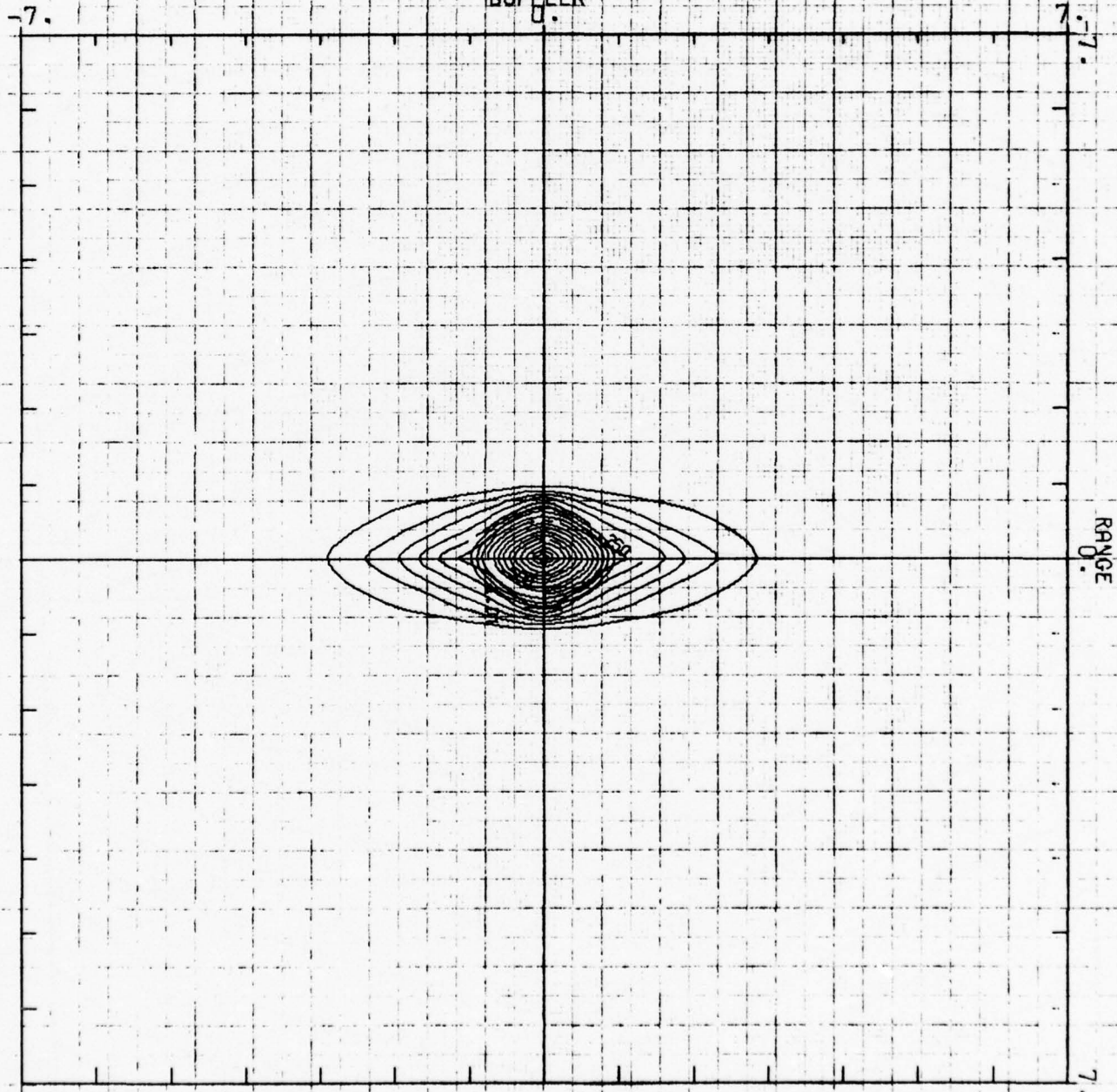
CONDITIONAL PROBABILITY MAP

TAGSEA - 0707 --- SS = 5, ALT = 3.3 KFT, UP WIND



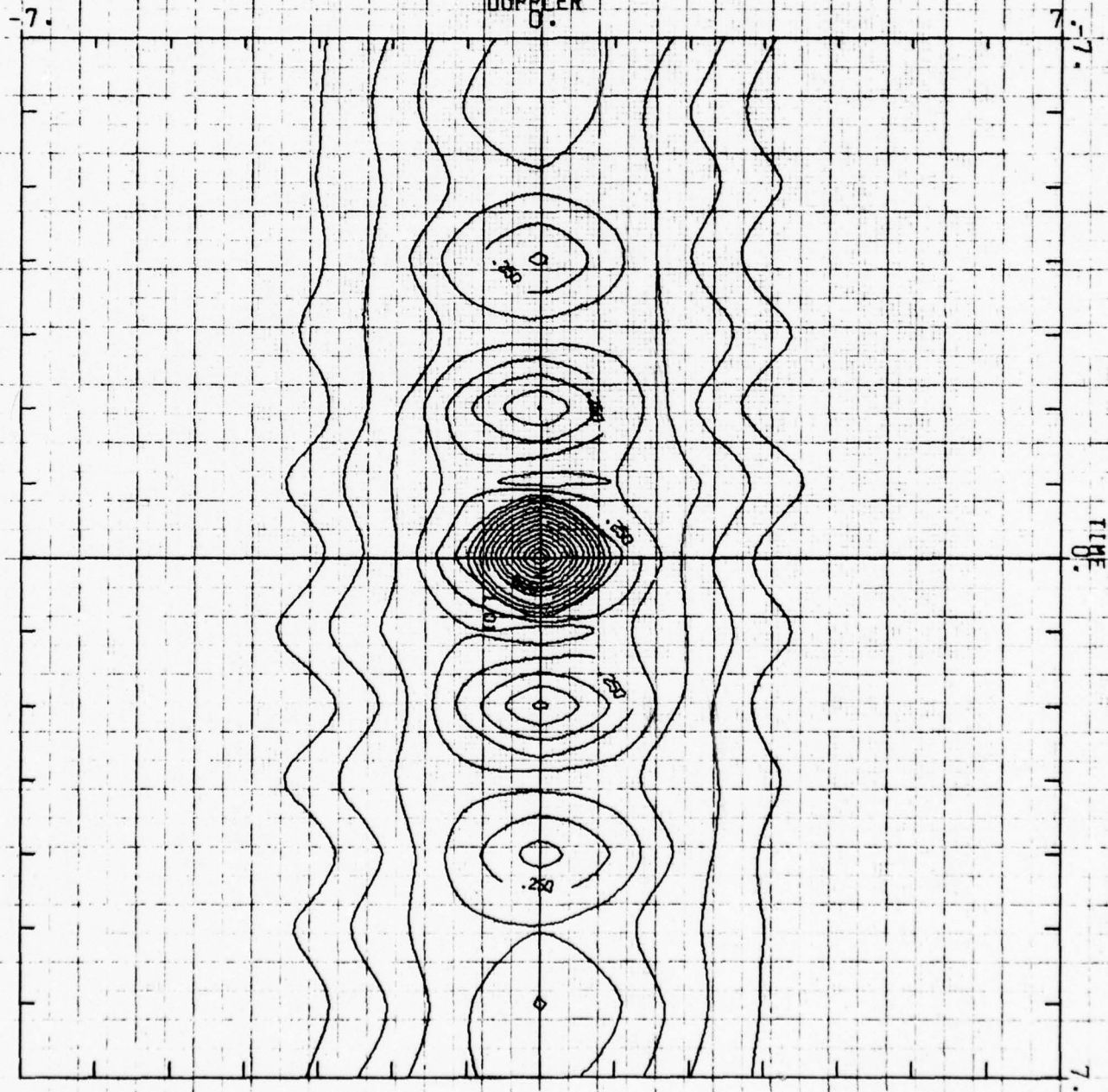
CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP
TAGSEA --- 0812 SS = 4. ALT = 500 FT. CROSS WIND. LIGHT SHIP TARGET
DOPPLER 0.



CONTOUR FROM -.10000 TO 1.0000
INTERVAL .60000E-01 SCALE FACTOR 1.0000

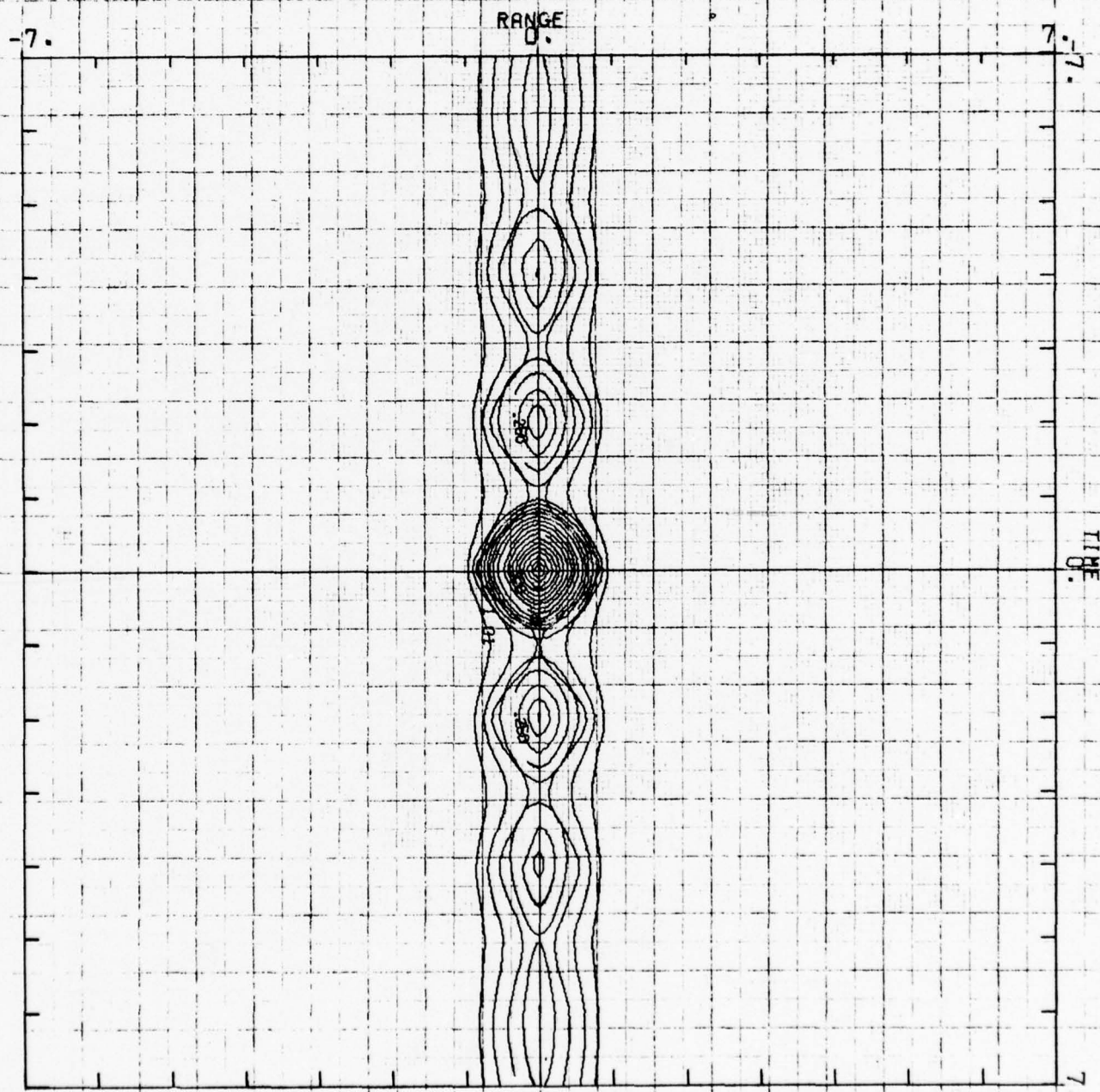
RELATIVE RANGE 0. CONDITIONAL PROBABILITY MAP
TAGSEA --- 0812 SS = 4, ALT = 500 FT, CROSS WIND, LIGHT SHIP TARGET
DOPPLER 0.



CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0. CONDITIONAL PROBABILITY MAP

TAGSEA --- 0812 SS = 4. ALT = 500 FT. CROSS WIND. LIGHT SHIP TARGET



H-146

CONTOUR FROM -1.0000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 3102.0

HITS GT T2 = 50594.0

TIME COLLAPSED ARRAY

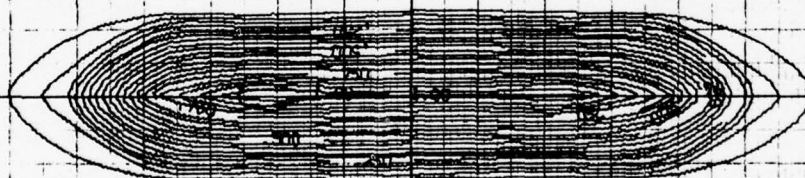
CONDITIONAL PROBABILITY MAP

TAGSEA --- 0812 SS = 4, ALT = 500 FT. CROSS WIND. LIGHT SHIP TARGET

DOPPLER

-7.

7.



RANGE

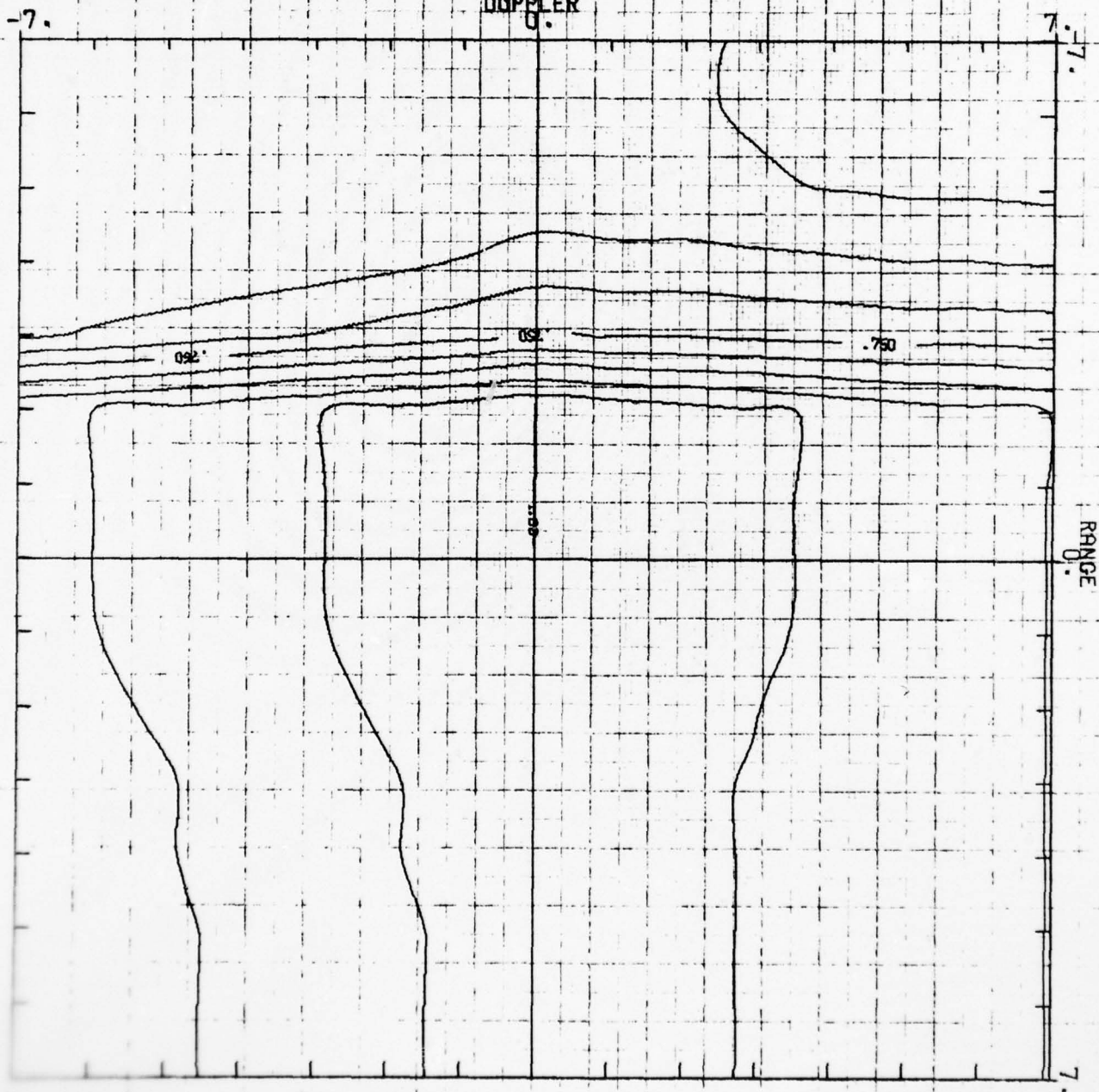
CONTOUR FROM -1.10000 TO 1.00000 TELE BAY THRESHOLD LEVEL IS 76
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 3102.0
ARRAY TOT= 581505.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA --- 0812 SS = 4. ALT = 500 FT. CROSS WIND. LIGHT SHIP TARGET

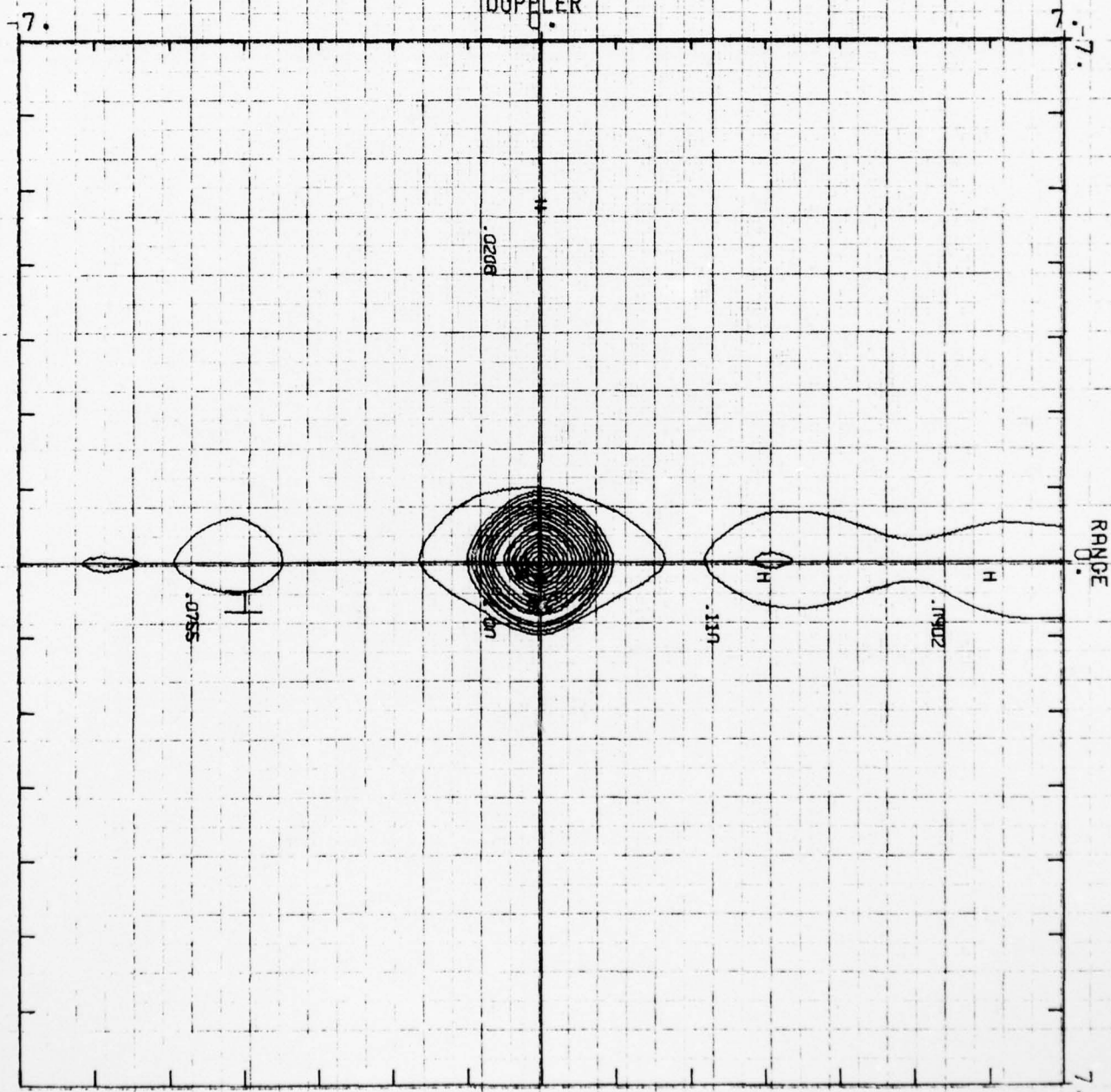
DOPPLER
0.



CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1105 --- SS = 1, ALT = 2.2 KFT, DOWN WIND

DOPPLER

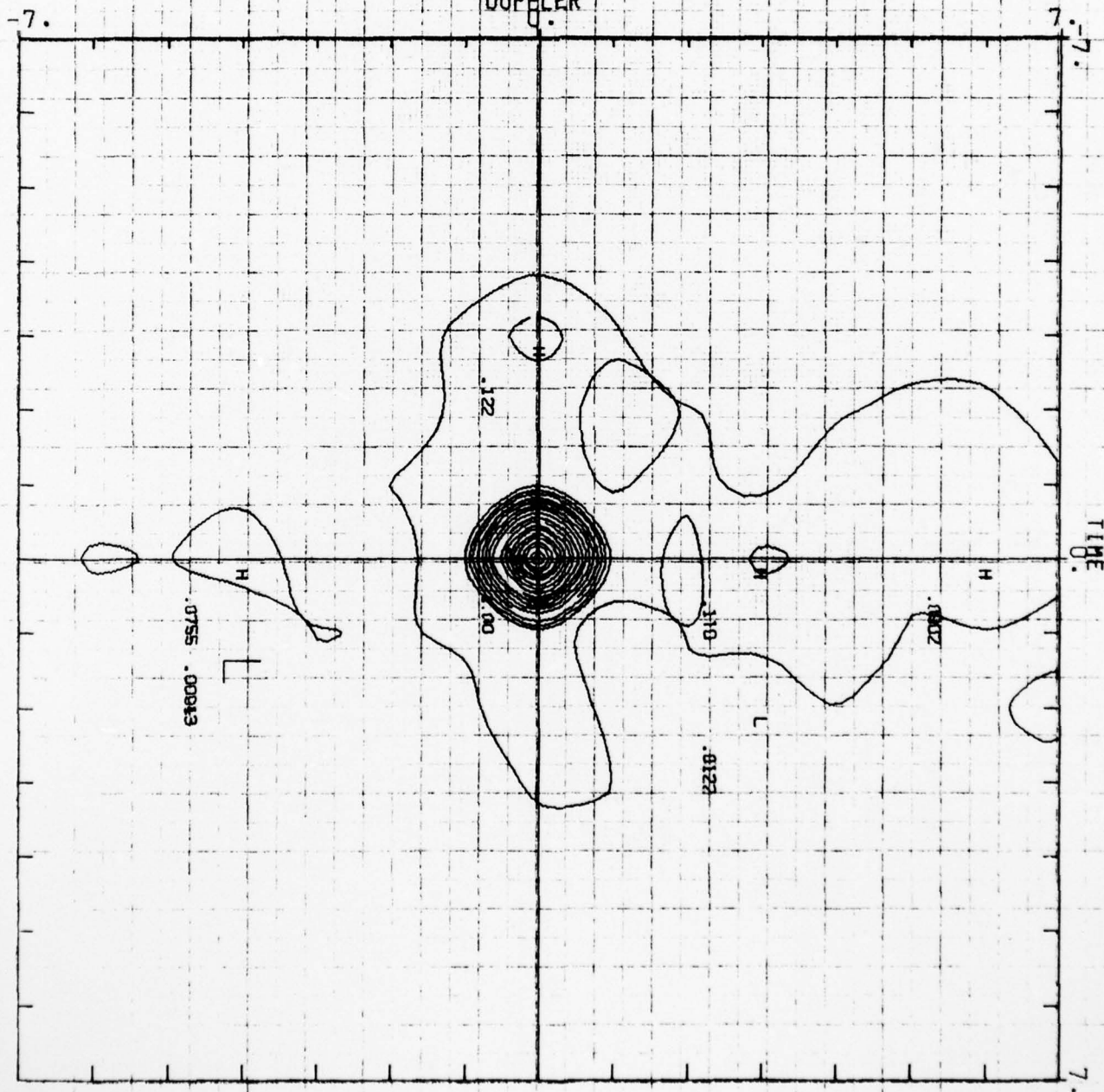


CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 1105 --- SS = 1. ALT = 2.2 KFT. DOWN WIND

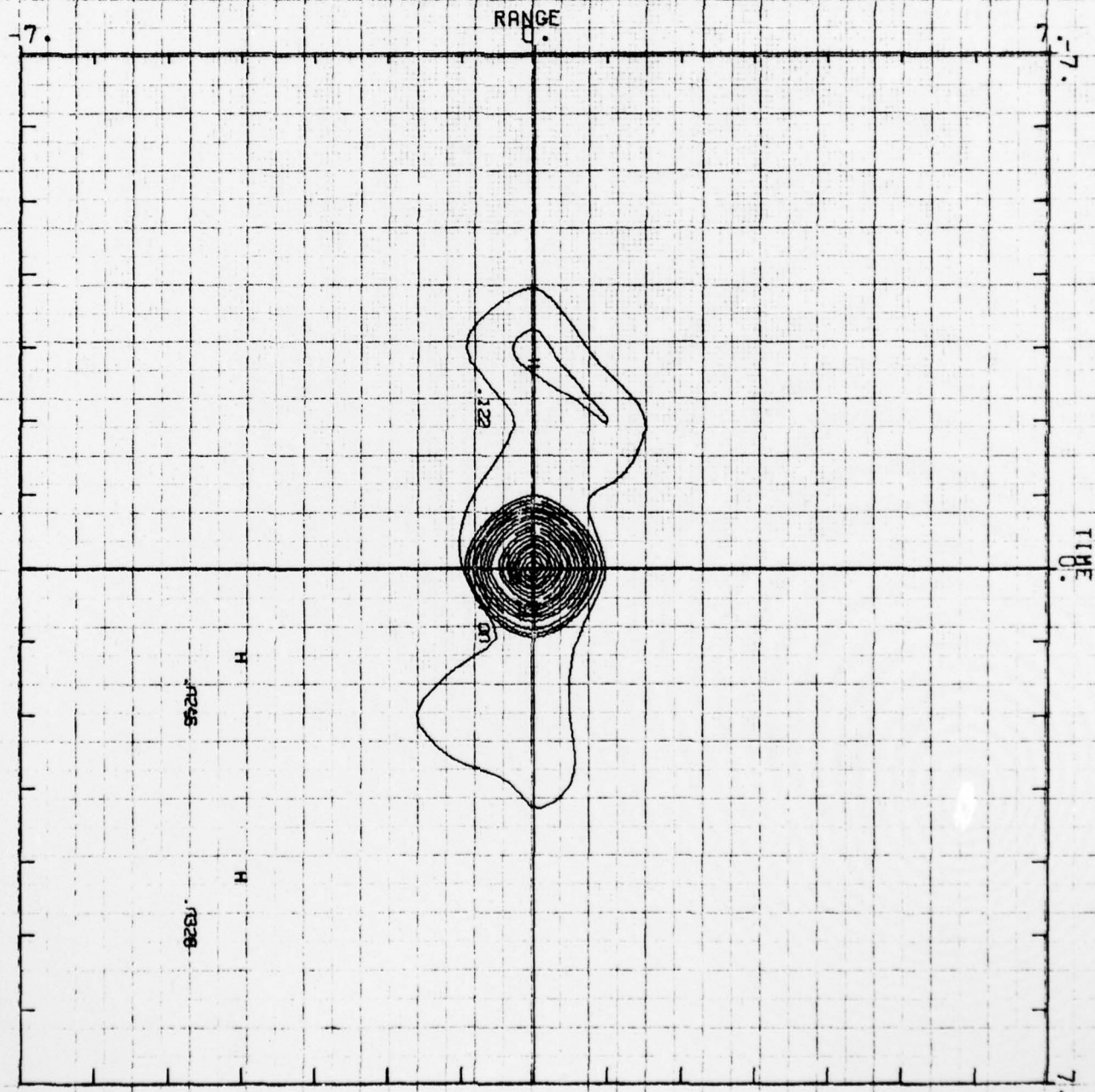
DOPLER



CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP

TAGSEA - 1105 --- SS = 1, ALT = 2.2 KFT. DOWN WIND



CONTOUR FROM -1.0000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 221.0

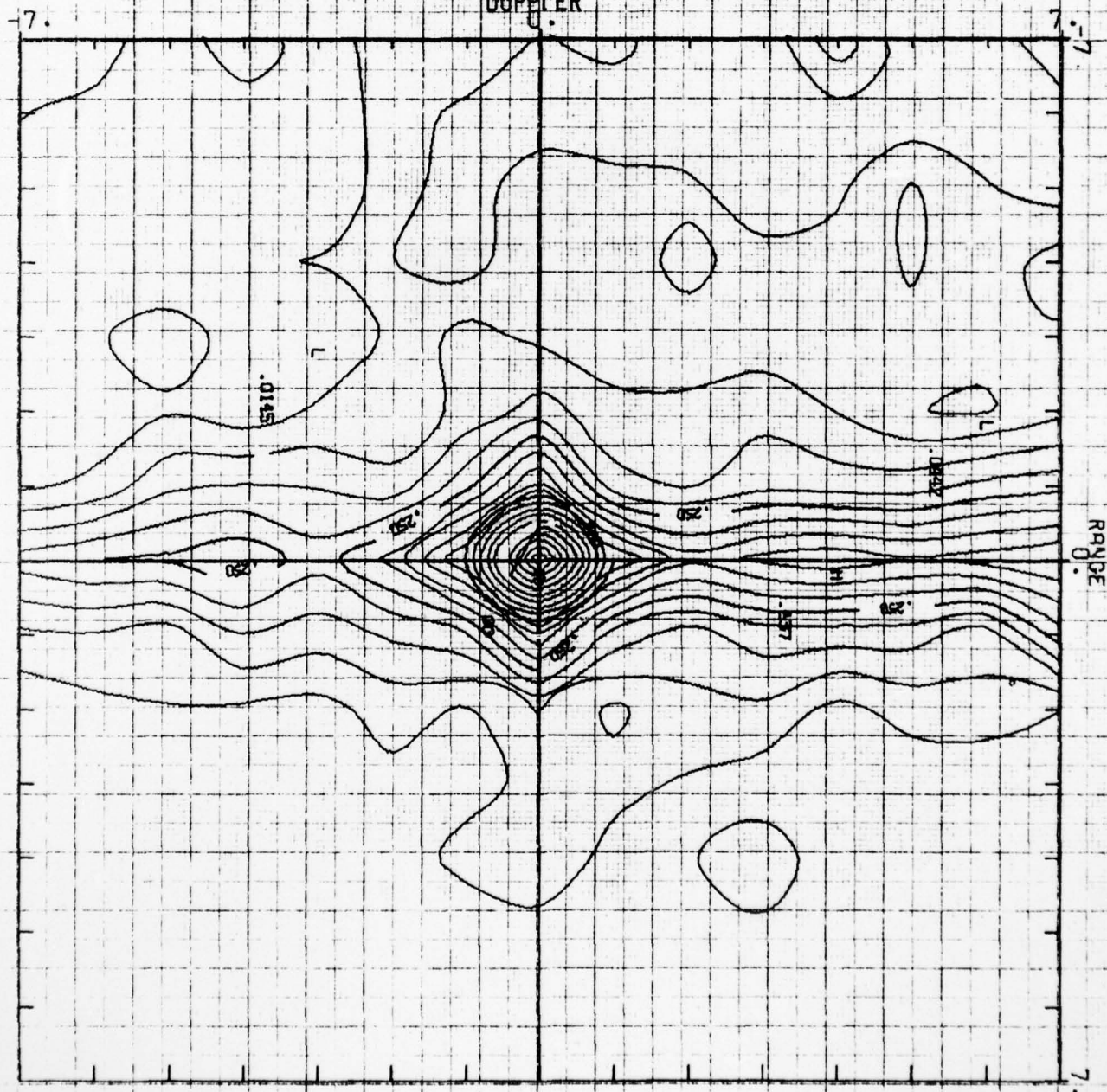
HITS GT T2 = 3075.0

TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 1105 --- SS = 1, ALT = 2.2 KFT. DOWN WIND

DOPPLER



72

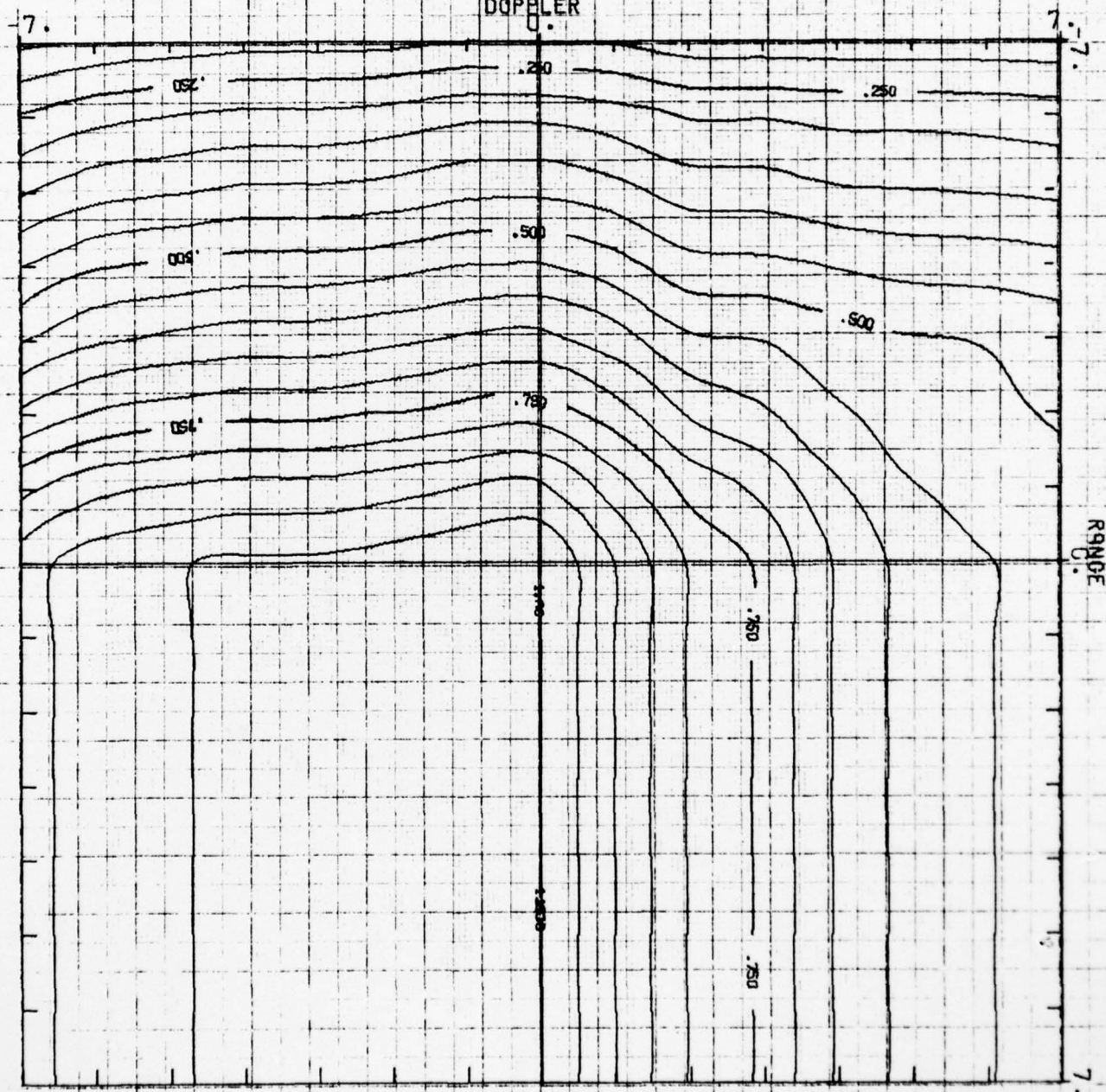
PEAK(0,0)= 221.0

ARRAY TOT= 32968.0

CONDITIONAL PROBABILITY MAP

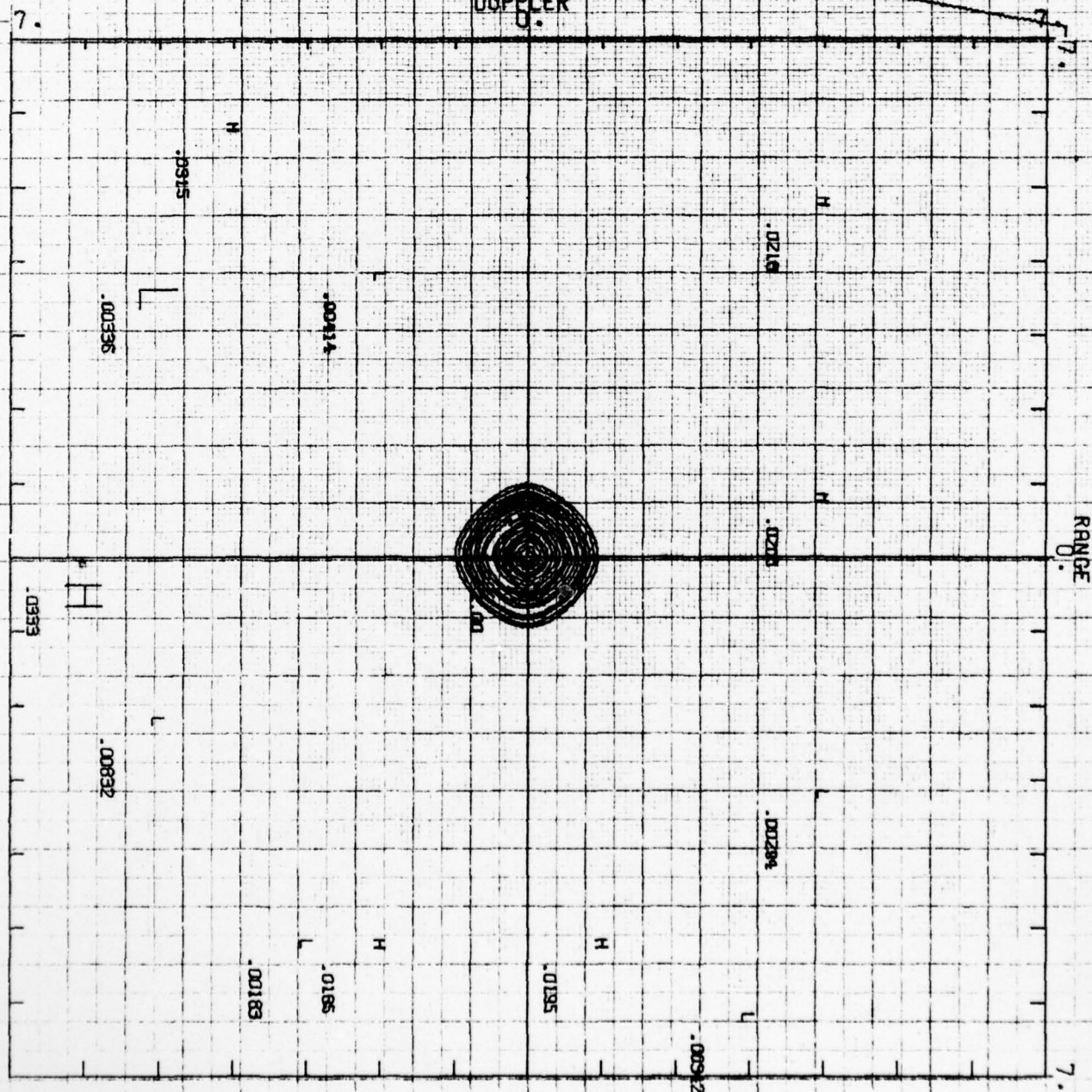
$$SS = 1.$$

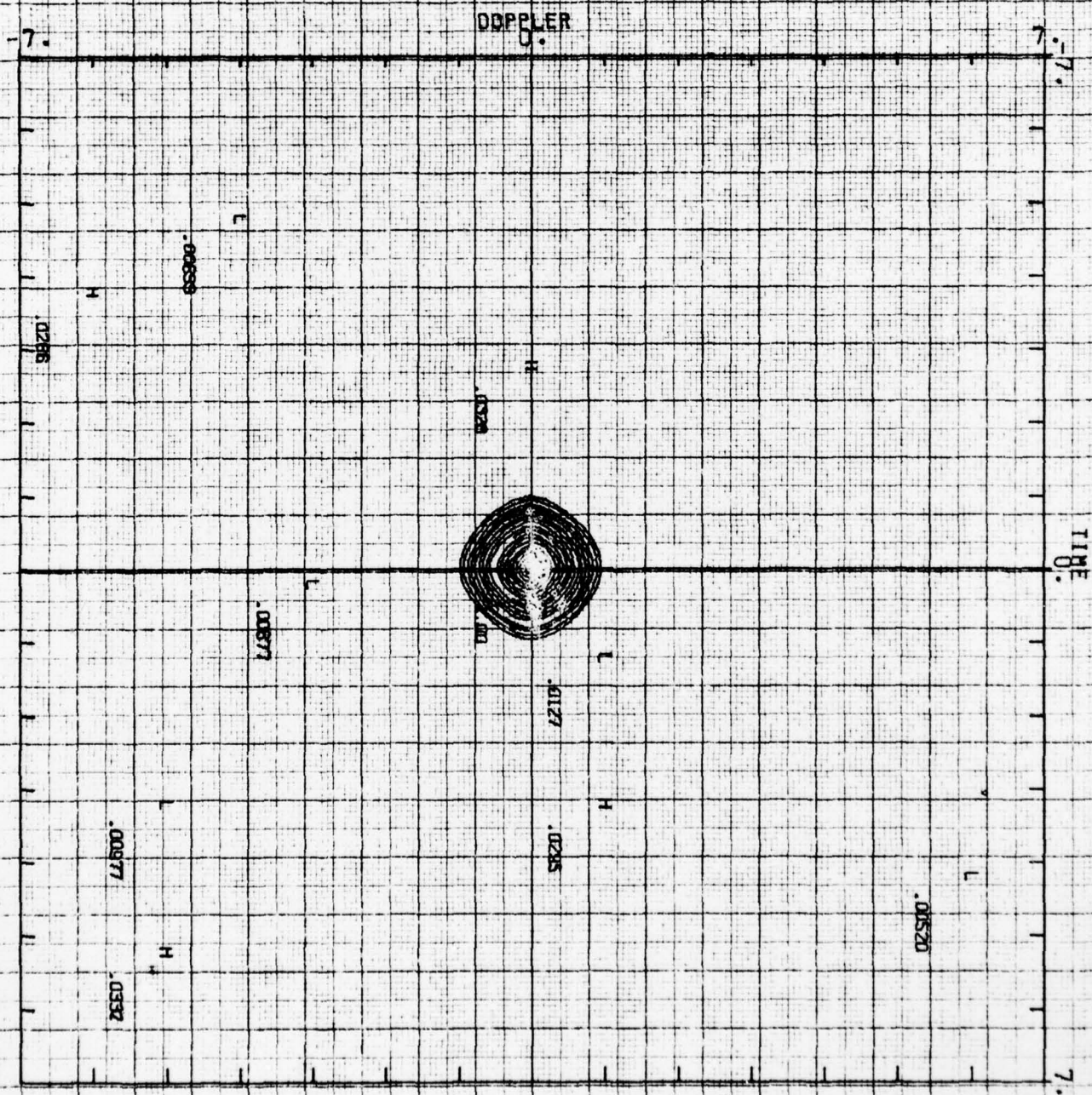
DOPPLER



H-153

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1107 --- SS = 1, ALT = 2.2 KFT. UP WIND
7. DOPPLER

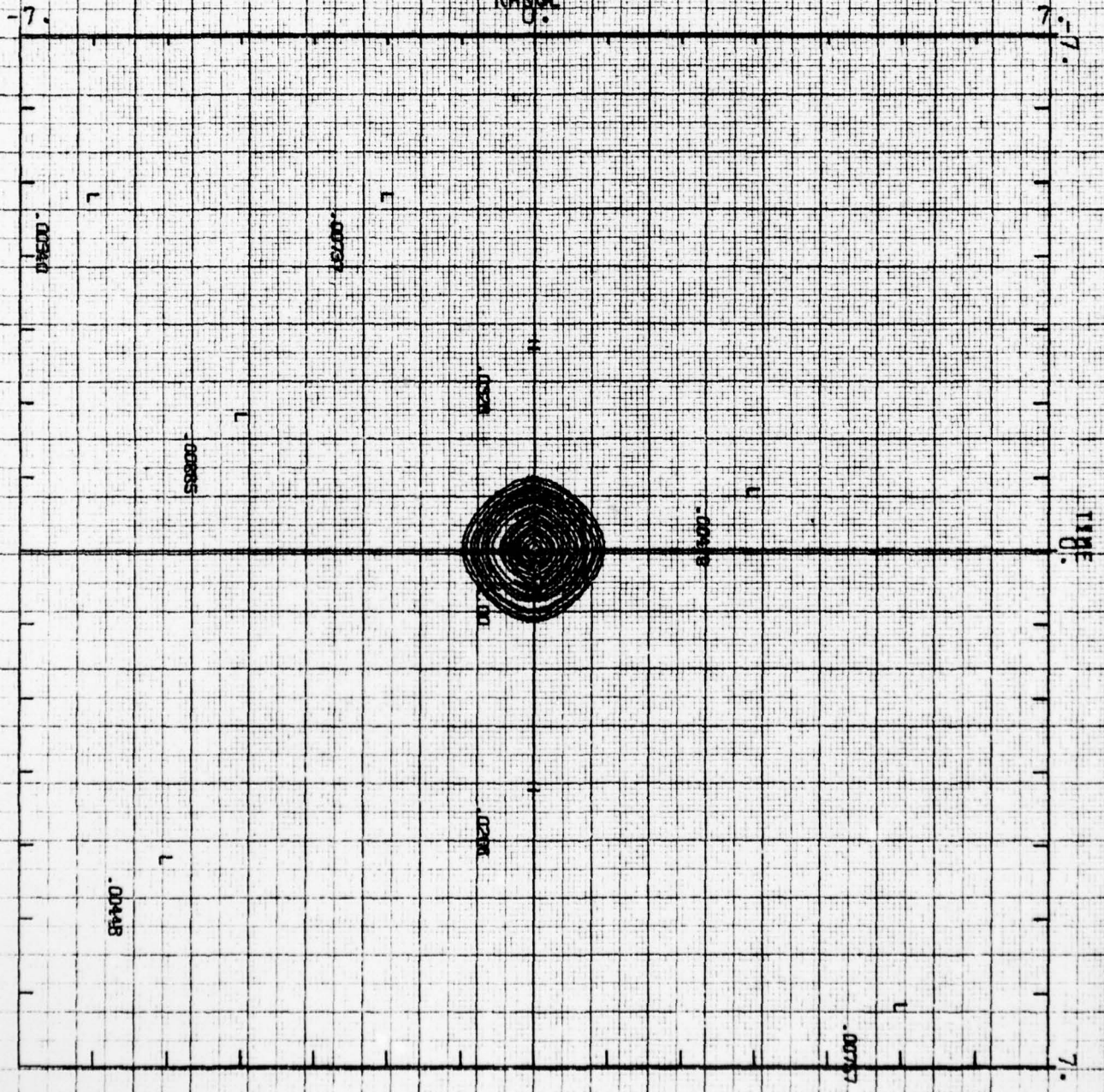




CONTOUR FROM -.10000 TO 1.0000
INTERVAL .50000E-01 SCALE FACTOR 1.0000

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1107 --- SS = 1, ALT = 2.2 KFT. UP WIND

RANGE
0.



CONTOUR FROM -.10000 TO 1.0000

INTERVAL .80000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 1189.0

HITS GT T2 = 29601.0

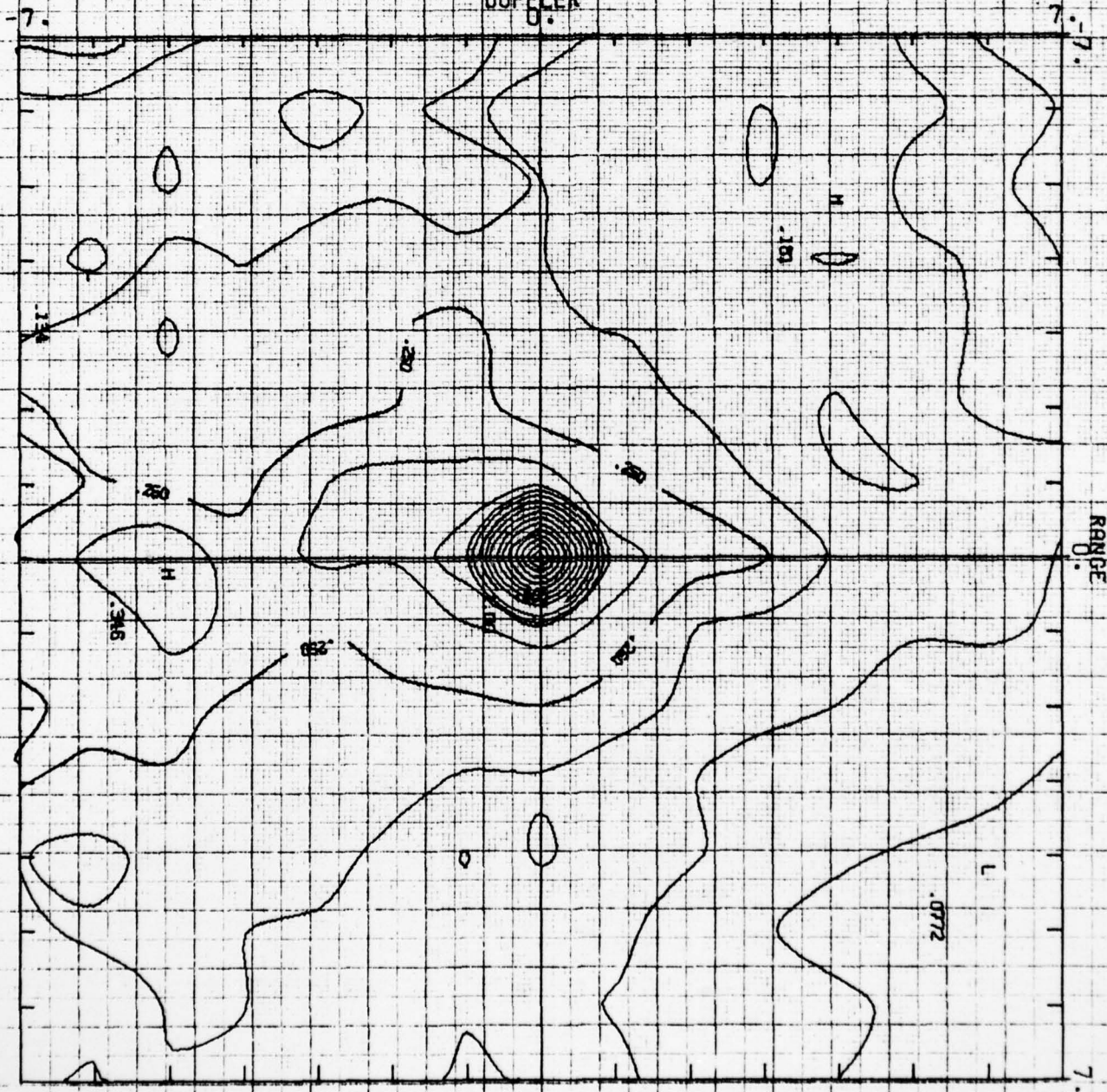
TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MRP

TARGET - 1107 --- SS = 1. ALT = 2.2 KFT.

UP WIND

DOPPLER
0.

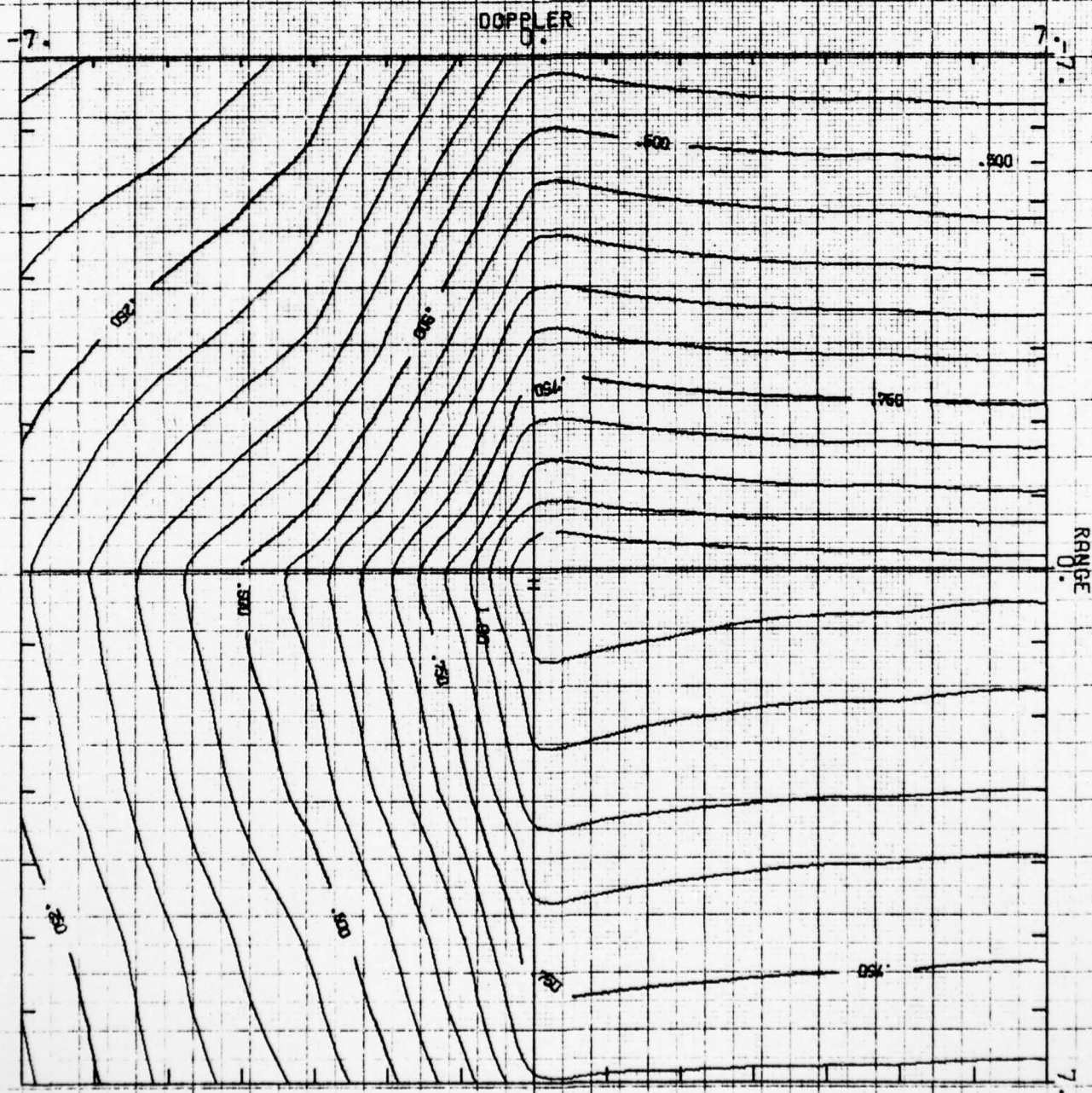


CONTOUR FROM -.10000 TO 1.0000 TELE BAY THRESHOLD LEVEL IS 86
INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0.0)= 1189.0
ARRAY TOT= 154259.0

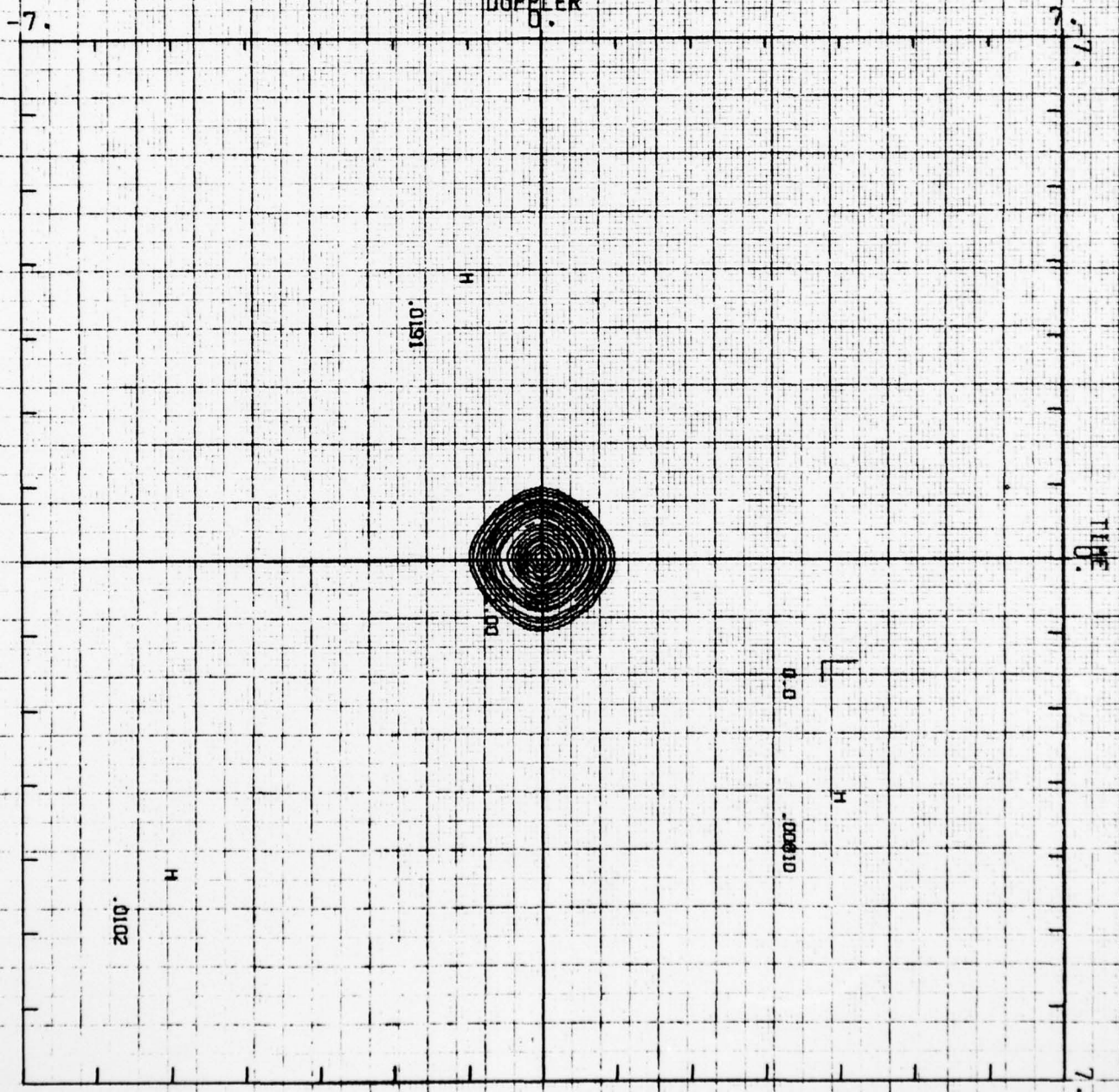
NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 1107 --- SS = 1. ALT = 2.2 KFT. UP WIND



RELATIVE	RANGE	0	CONDITIONAL	PROBABILITY MAP
TAGSEA - 1604 ---	SS = 4.	ALT = 2.2 KFT.	UP WIND	
-7.		DOPPLER		
		0.		



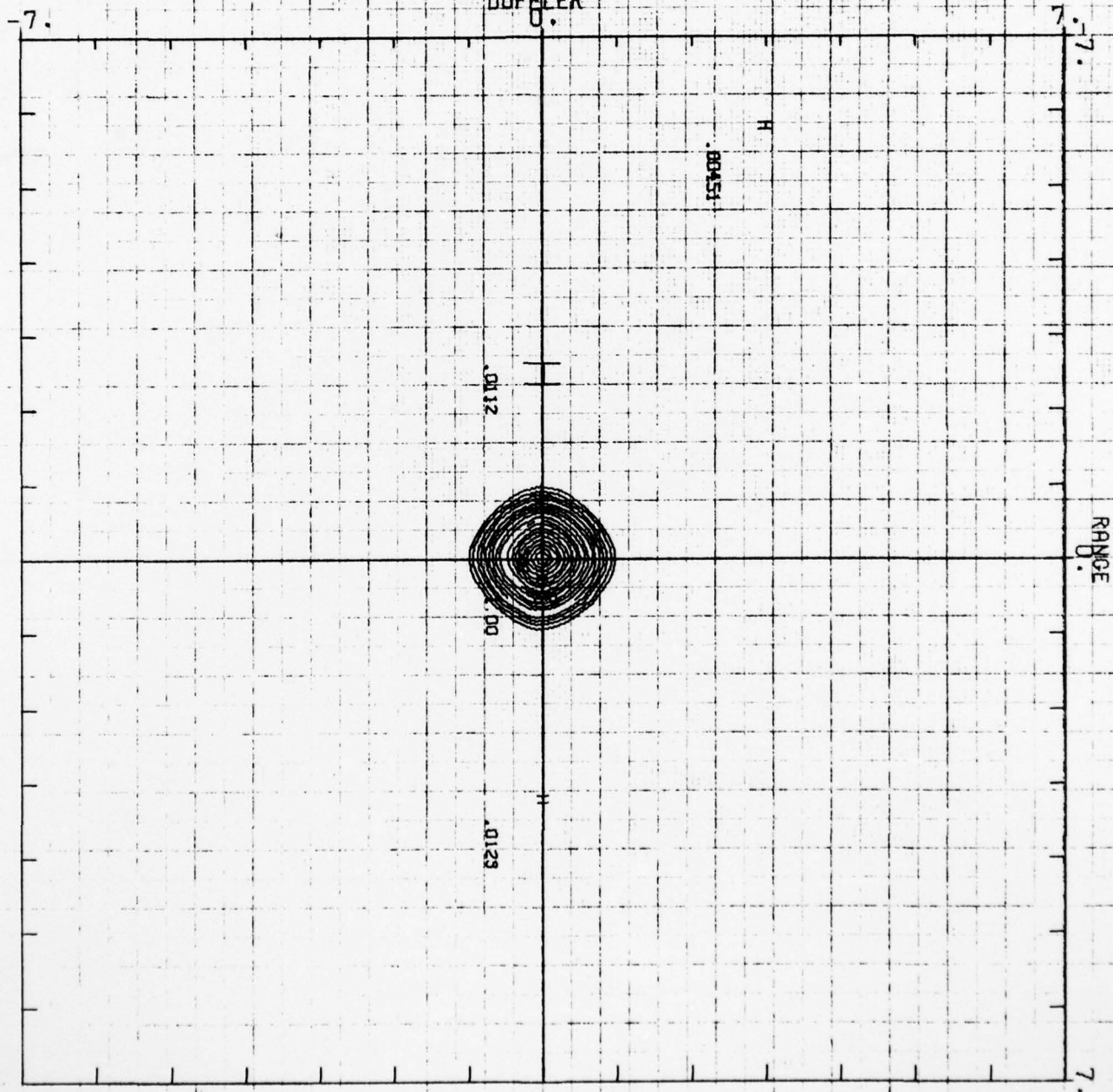
H-159

CONTOUR FROM -10000 TO 10000
INTERVAL .60000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP

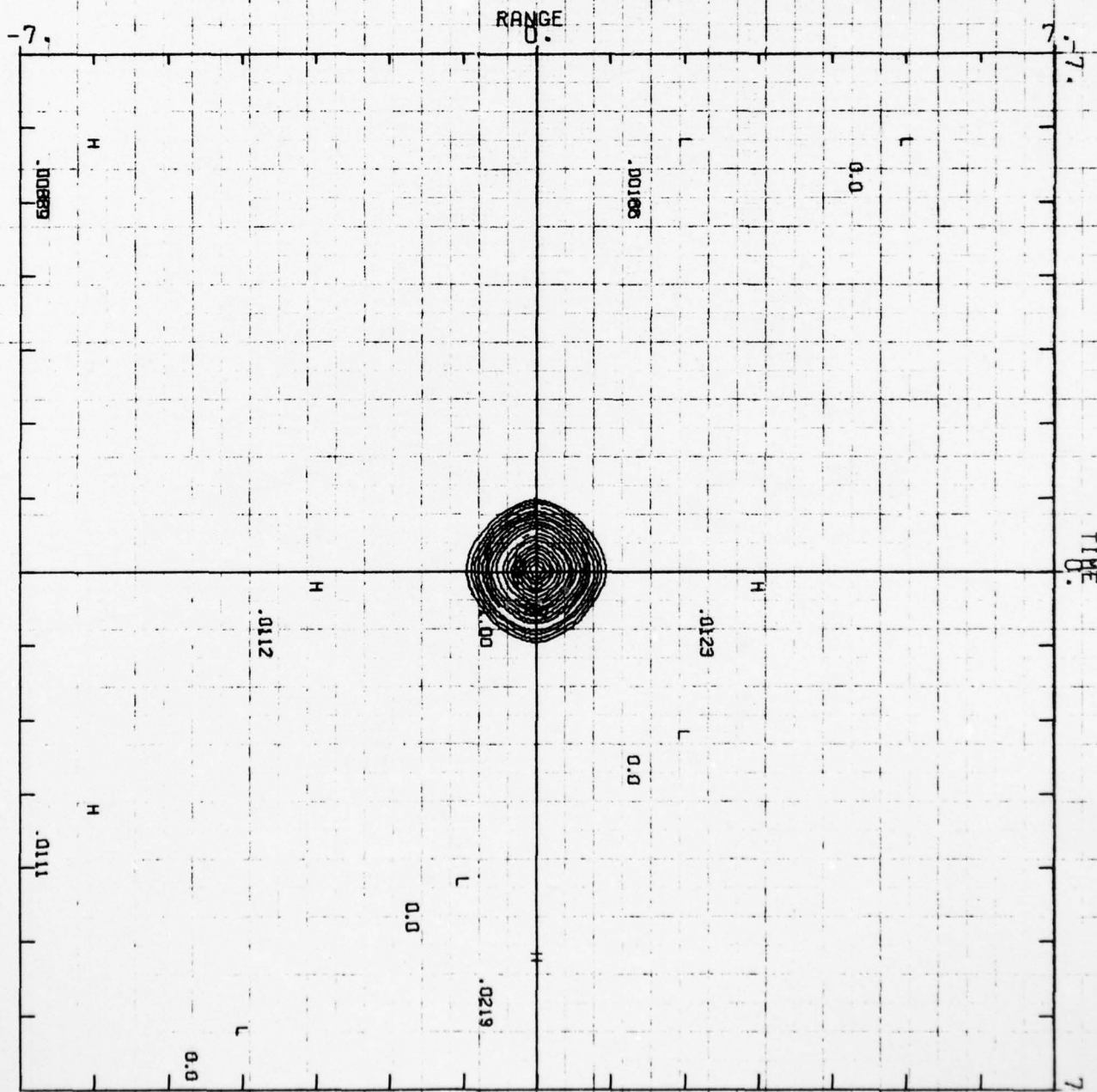
TAGSEA - 1604 --- SS = 4, ALT = 2.2 KFT, UP WIND

DOPPLER



H-160

RELATIVE DOPPLER 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1604 --- SS = 4, ALT = 2.2 KFT, UP WIND



AD-A036 974

GENERAL DYNAMICS/POMONA CALIF POMONA DIV
TAGSEA PROGRAM. VOLUME IV. STANDARD CLUTTER ANALYSIS OUTPUTS.(U)
AUG 76

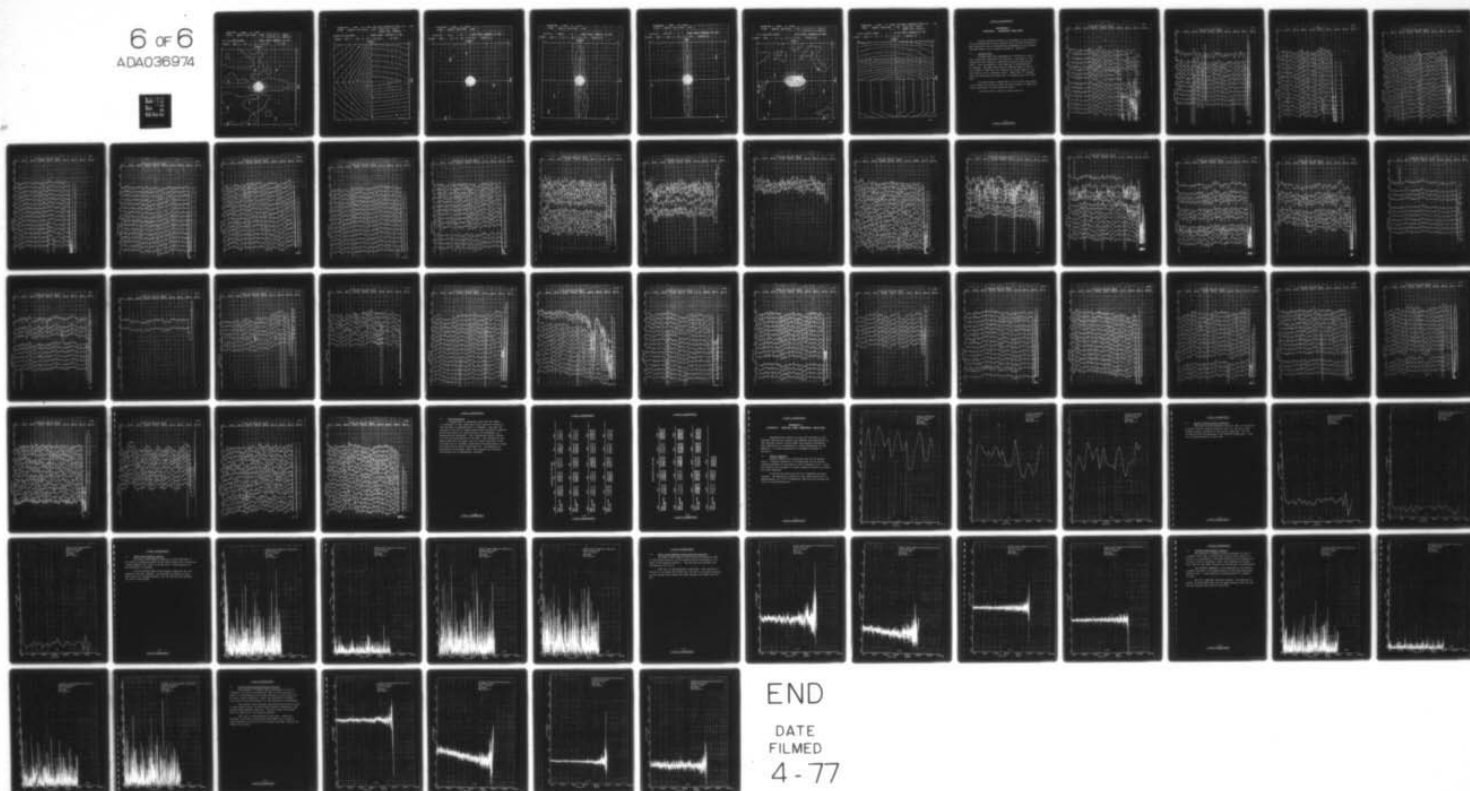
F/G 17/9

N00017-73-C-2244

NL

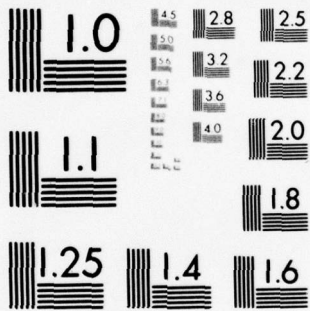
UNCLASSIFIED

6 OF 6
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4 - 77



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

CONTOUR FROM -.10000 TO 1.0000

INTERVAL .50000E-01 SCALE FACTOR 1.0000

HITS GT T1 = 638.0

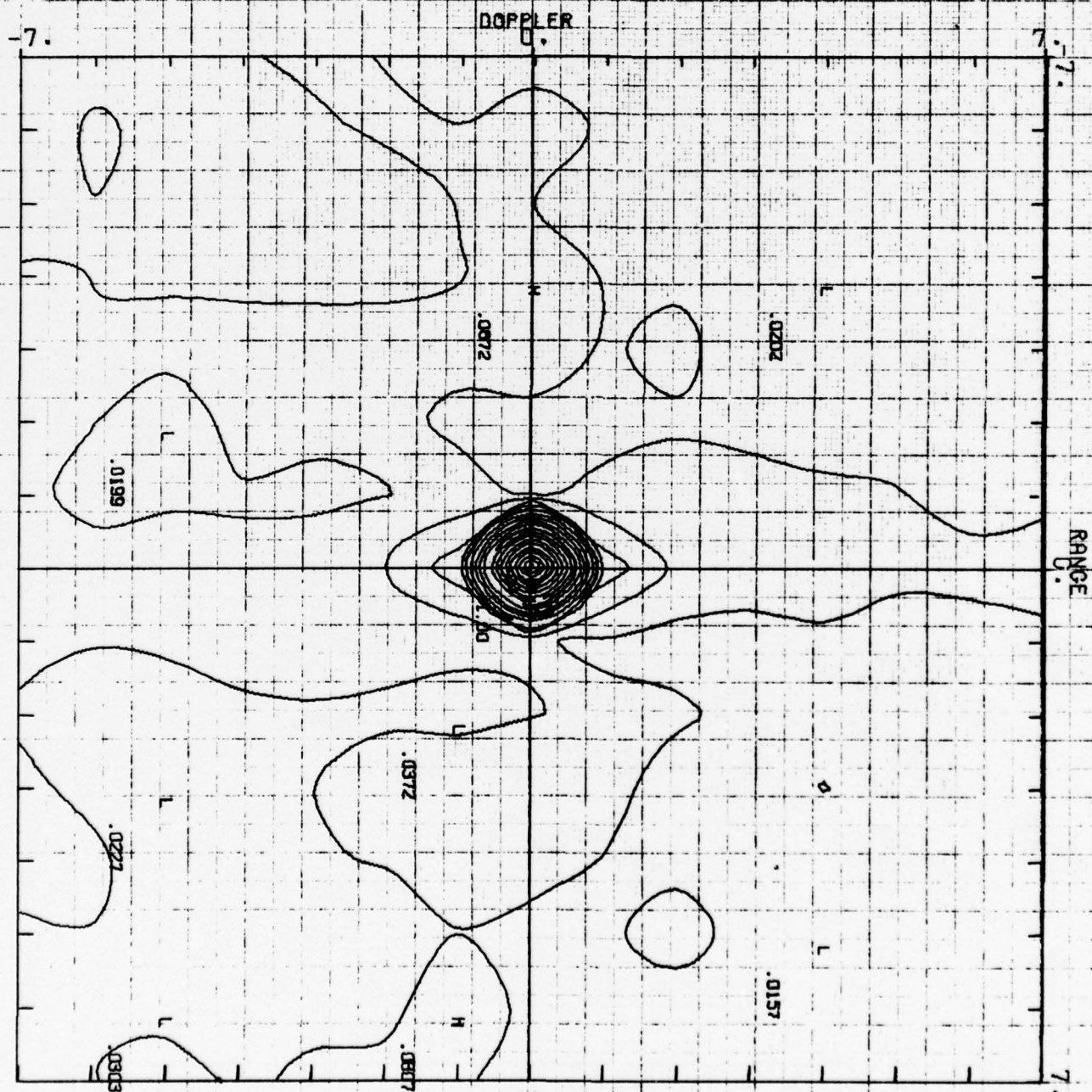
HITS GT T2 = 5087.0

TIME COLLAPSED ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA - 1604 --- SS = 4. ALT = 2.2 KFT.

UP WIND



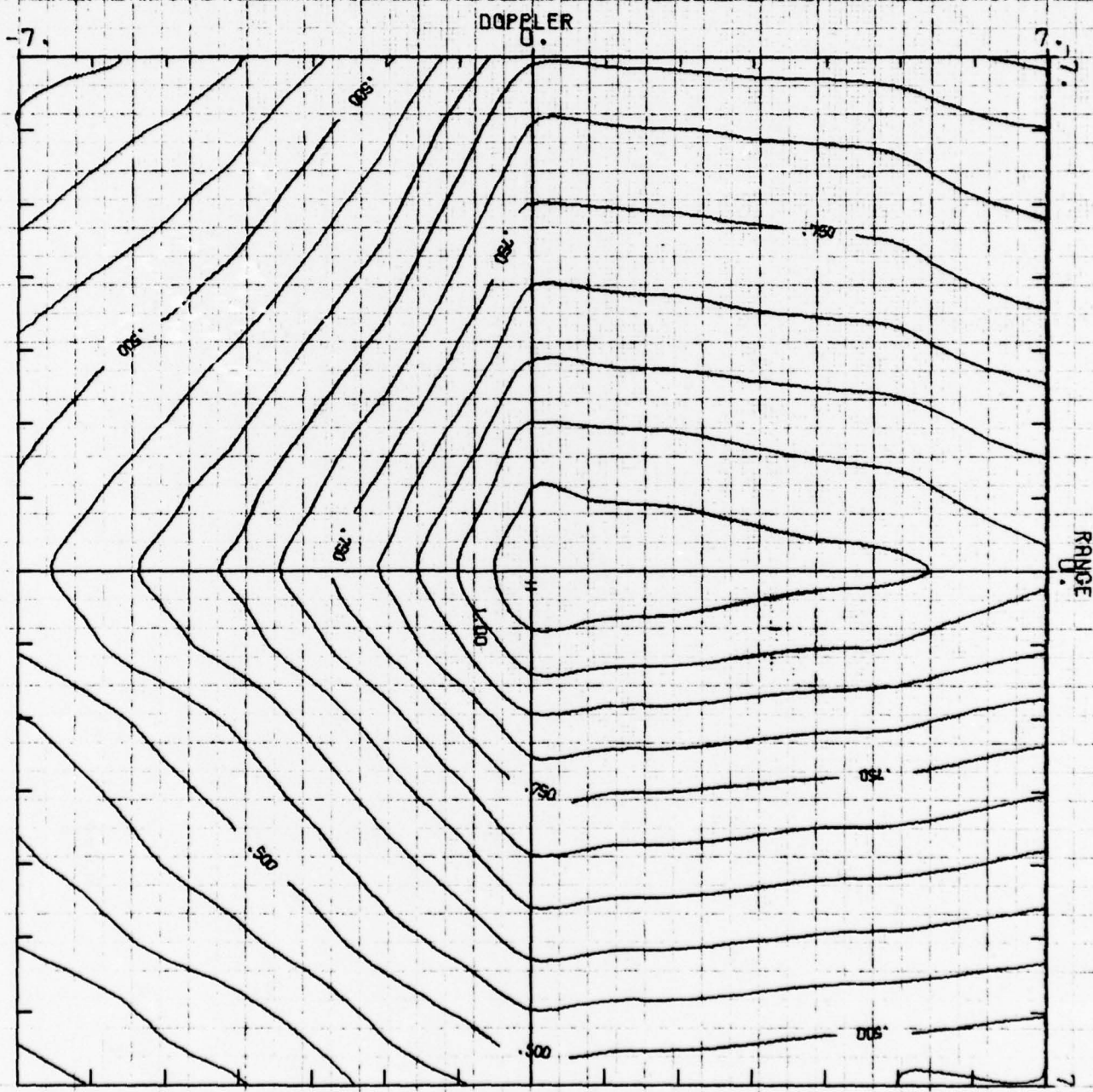
CONTOUR FROM -.10000 TO 1.0000 TELE RAY THRESHOLD LEVEL IS 1-10

INTERVAL .50000E-01 SCALE FACTOR 1.0000 PEAK(0,0)= 638.0
ARRAY TOT= 92089.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

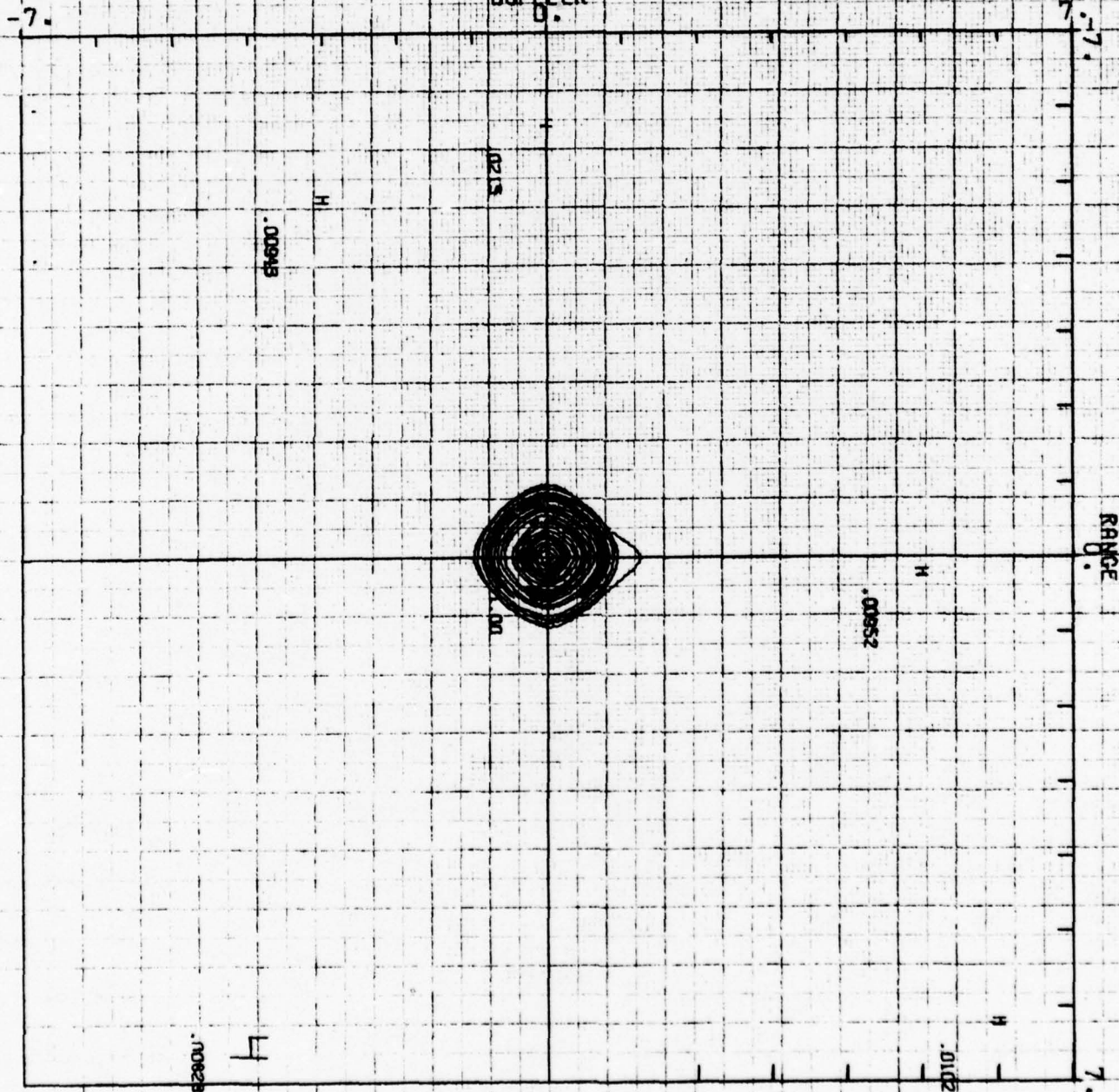
TAGSEA - 1604 --- SS = 4. ALT = 2.2 KFT. UP WIND



CONTOUR FROM 1.1000 TO 1.0000
INTERVAL .0000E-01 SCALE FACTOR 1.0000

RELATIVE TIME 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1706 --- SS = 4. ALT = 2.2 KFT. CROSS WIND

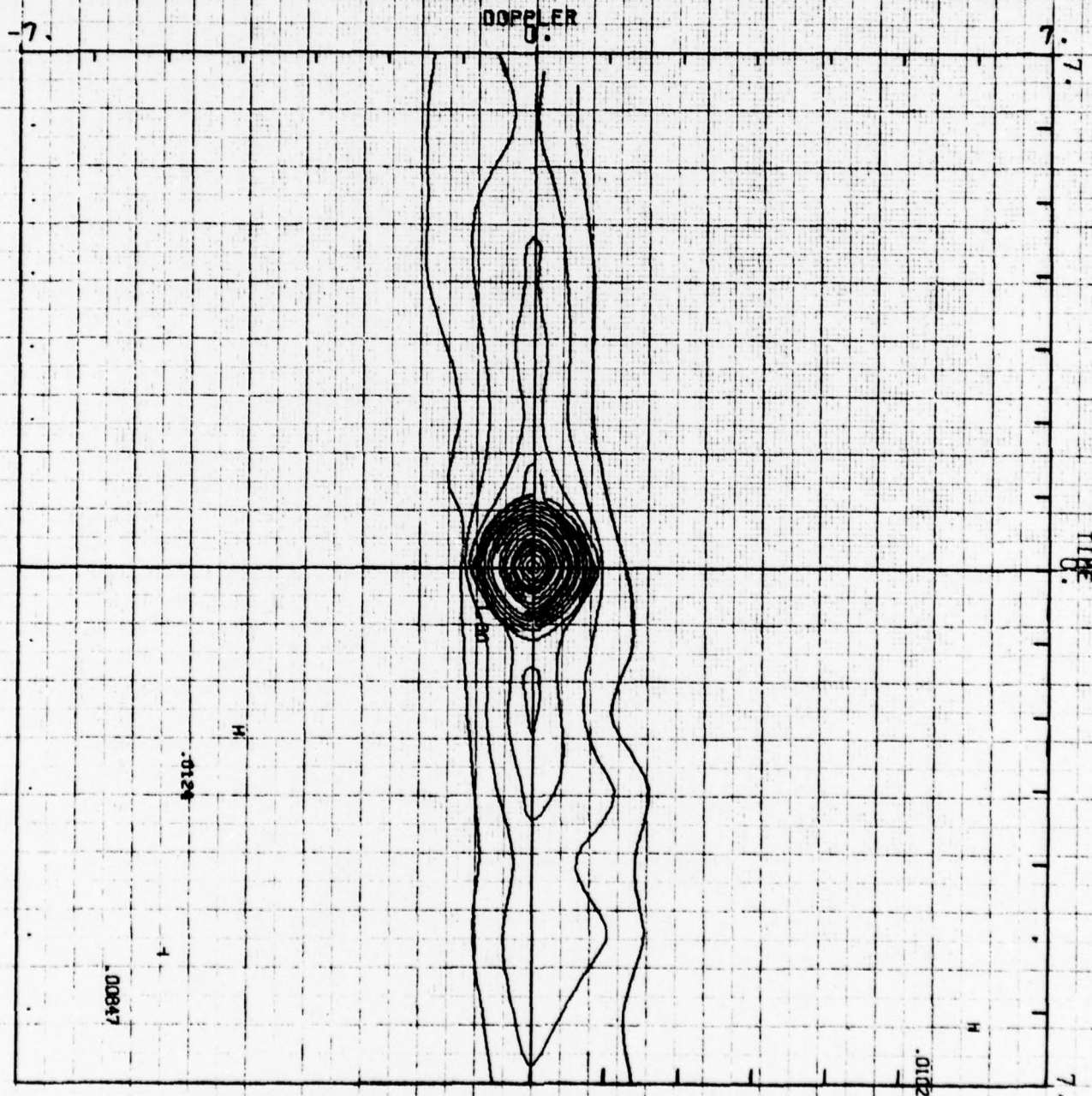
DOPPLER



H-164

CONTOUR FROM -1.1000 TO 1.1000
INTERVAL .5000E-01 SCALE FACTOR 1.0000

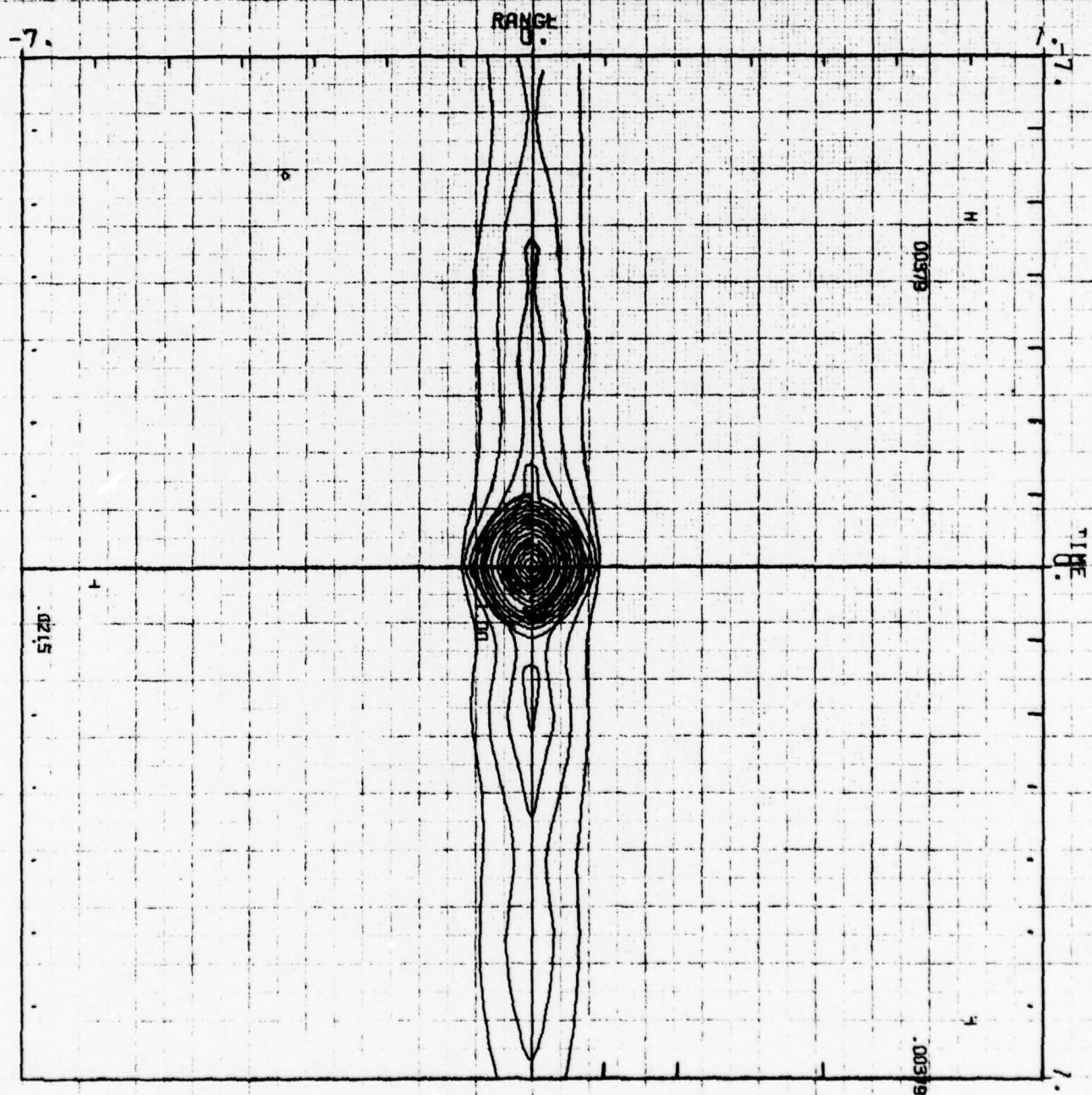
RELATIVE RANGE 0 CONDITIONAL PROBABILITY MAP
TAGSEA - 1706 -- SS = 4 ALT = 2.2 KFT. CROSS WIND



H-165

CONTOUR FROM .1000 TO 1.000
INTERVAL 5000E-01 SCALE FACTOR 1.000

RELATIVE CO-PLER 0 CONDITIONAL PROBABILITY MAP
TACSEA - 1706 -- SS = 4. ALT = 2.2 KFT. CROSS WIND



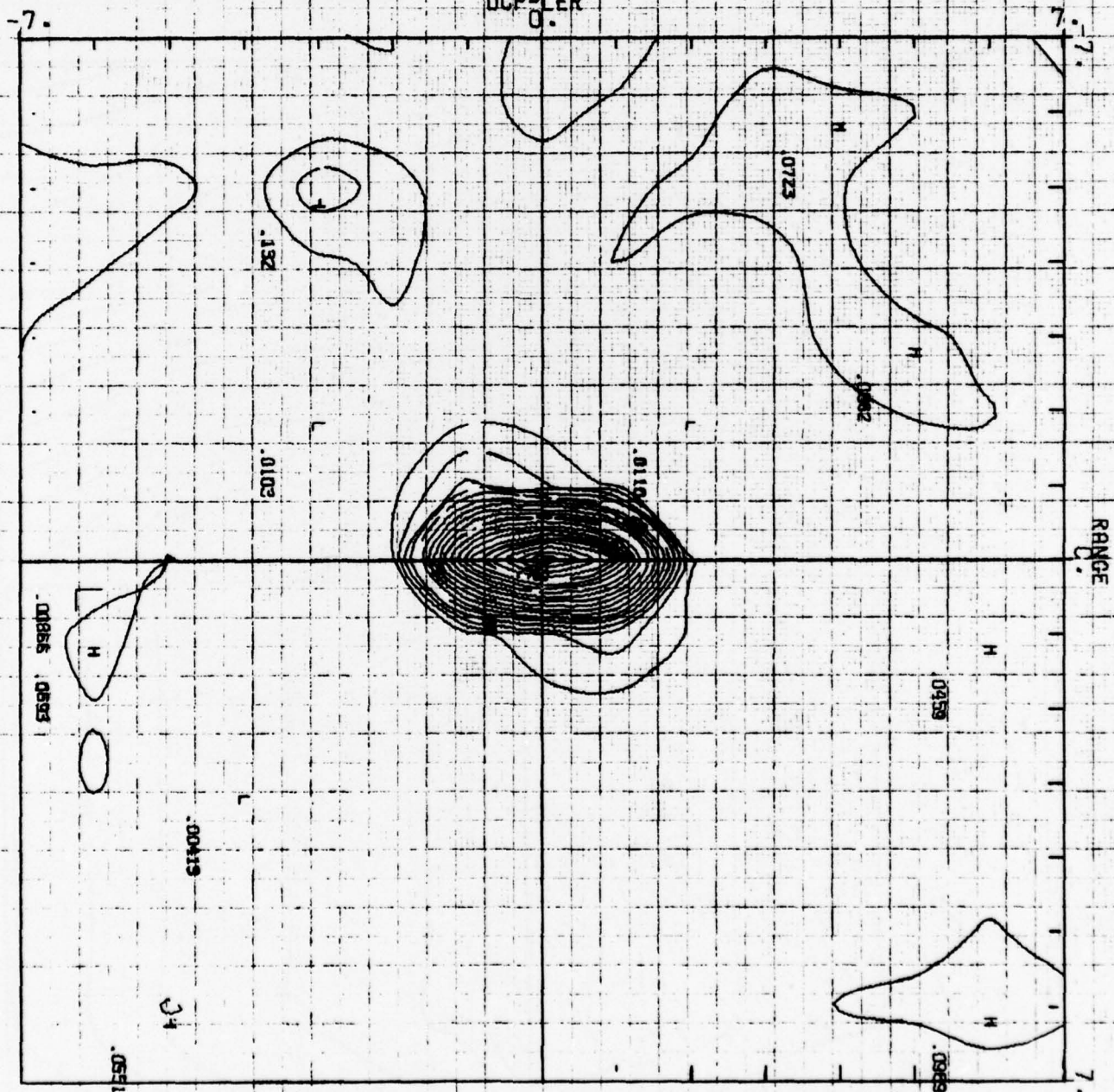
INTERVAL	5000E-01	SCALE FACTOR	1.0000
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HITS	GT	T2	=	2364.0
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CONDITIONAL PROBABILITY MAP

TAGSEA - 1706 --- °S - 4, ALT = 2.2 KFT. CROSS WIND

DCPDLER



H-167

CONTOUR FROM .10000 TO .10000 TELE BAY THRESHOLD LEVEL IS 98

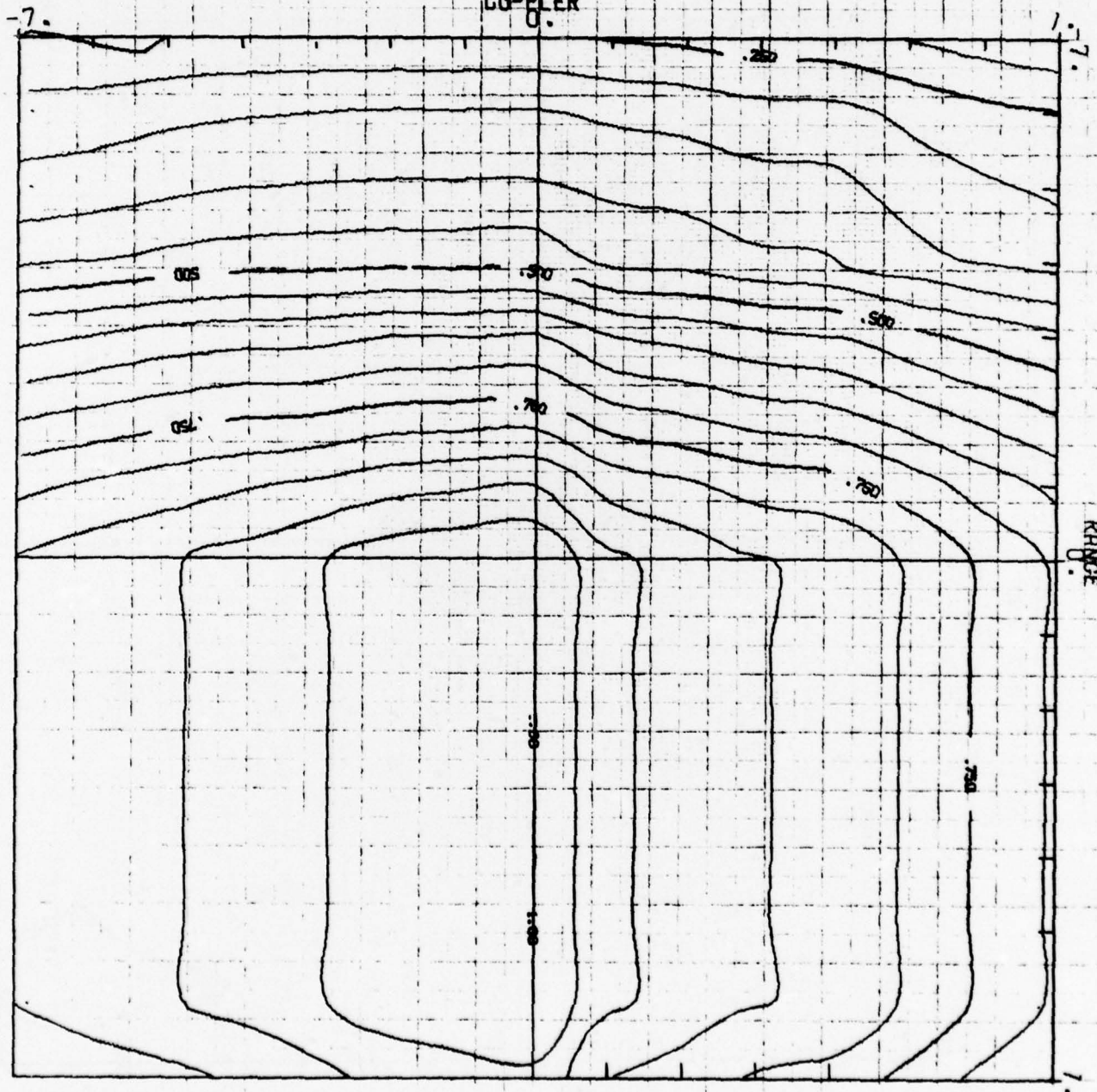
INTERVAL 50000E-01 SCALE FACTOR 1.0000 PEAK(0,0) = 264.0
ARRAY TOT = 41153.0

NORMALIZATION ARRAY

CONDITIONAL PROBABILITY MAP

TAGSEA = 1706 --- CS = 4. ALT = 2.2 KFT. CROSS WIND

COPIER
0.



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APPENDIX I OUTPUTS - AVERAGE ANALYSIS

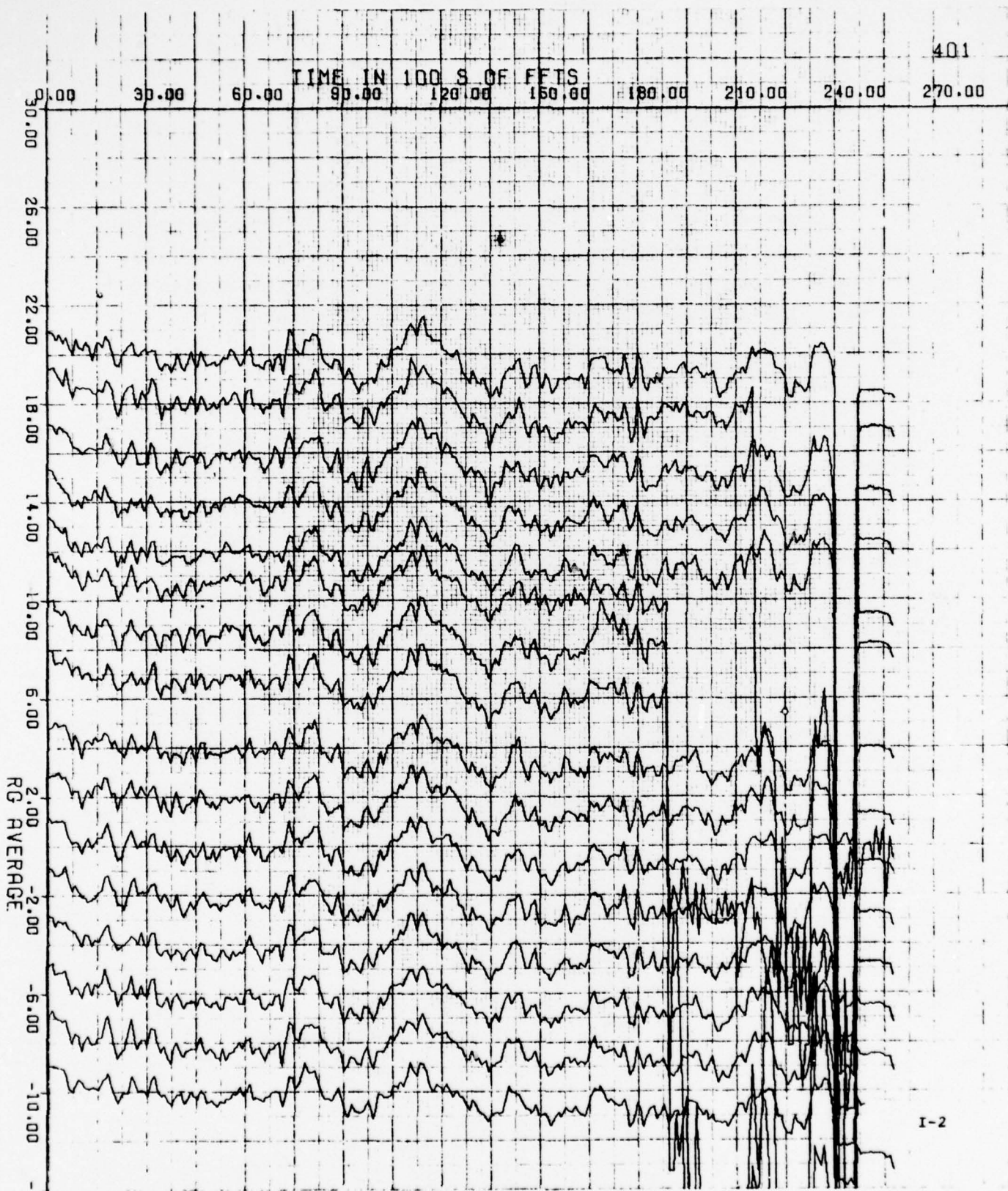
Average analysis outputs are included in this appendix. The two subsections contain Average Plots and Mean Statistics. Each subsection has an introductory paragraph on the contents and more detail can be found in Volume II, Section 9.

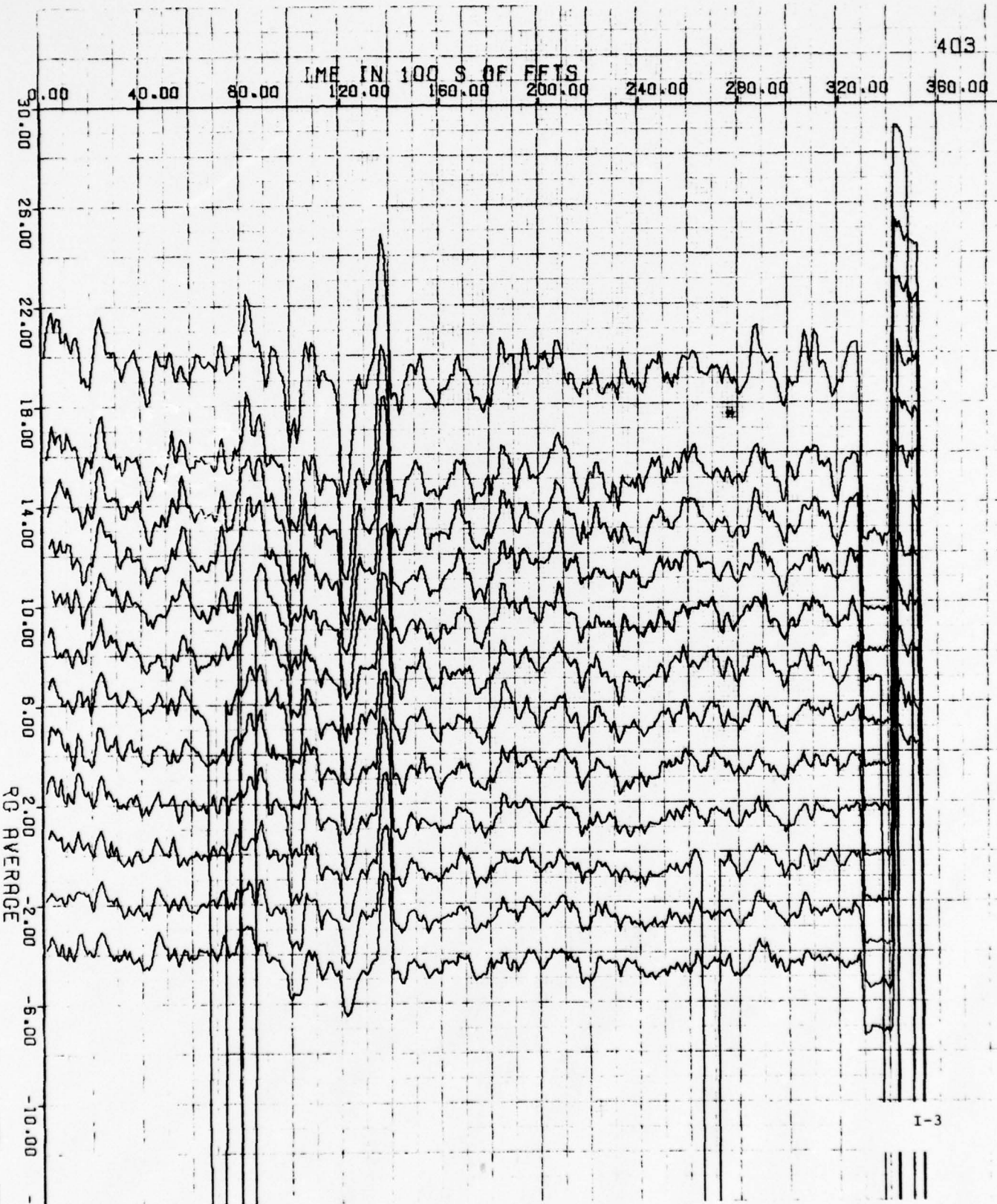
1.1 Average Plots

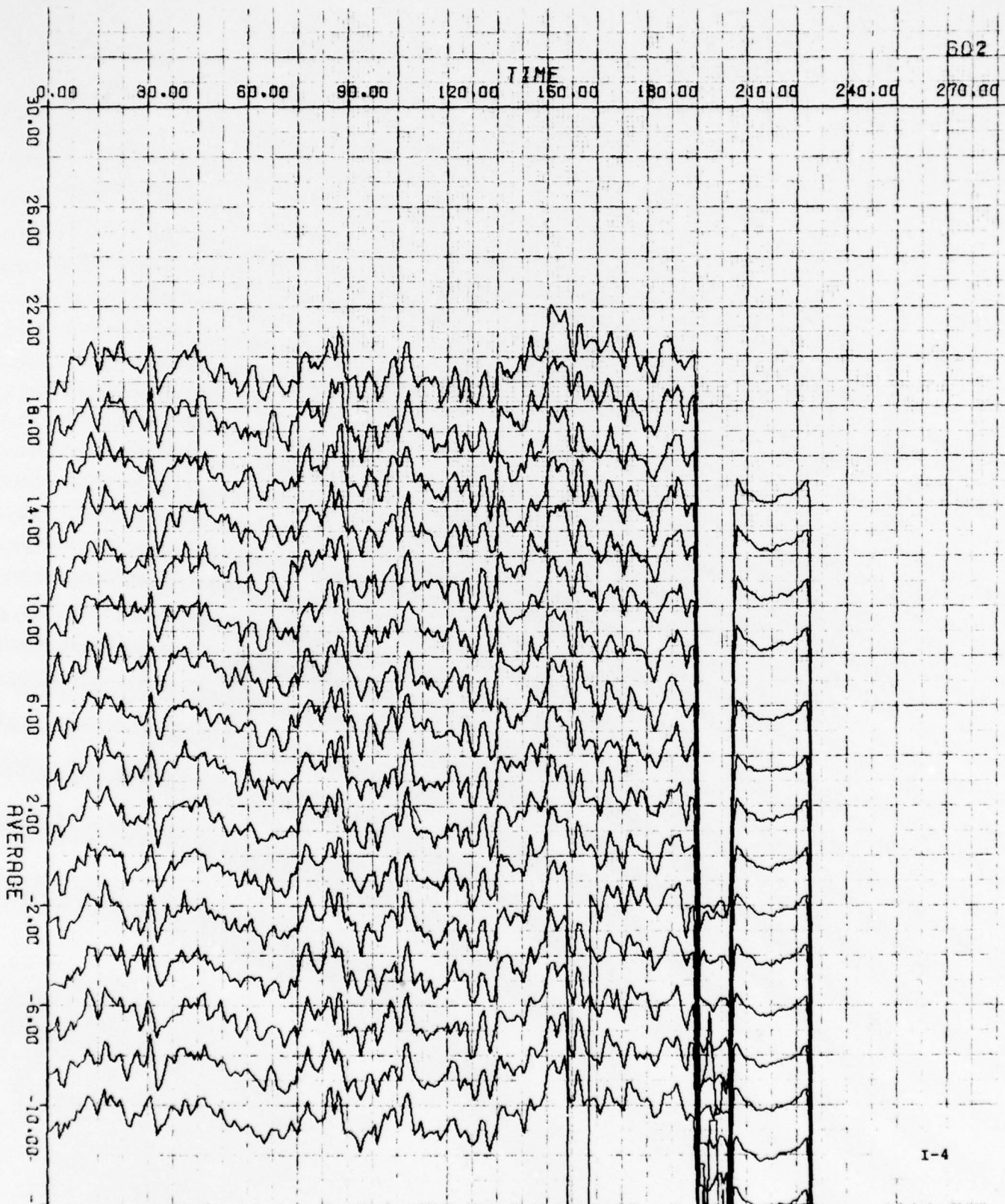
Average plots are generated as a function of time in each range gate where data is available. The power in 100 consecutive FFT frames is averaged to produce each plotted point. This represents a time aperture of approximately 0.9 second. The amplitude scale is 2dB per major division. A full +30dB is used only for indexing the range gates in the plots and is not an absolute scale. Range gate "0" appears near the 20dB mark and range gate "15" appears near the -10dB mark.

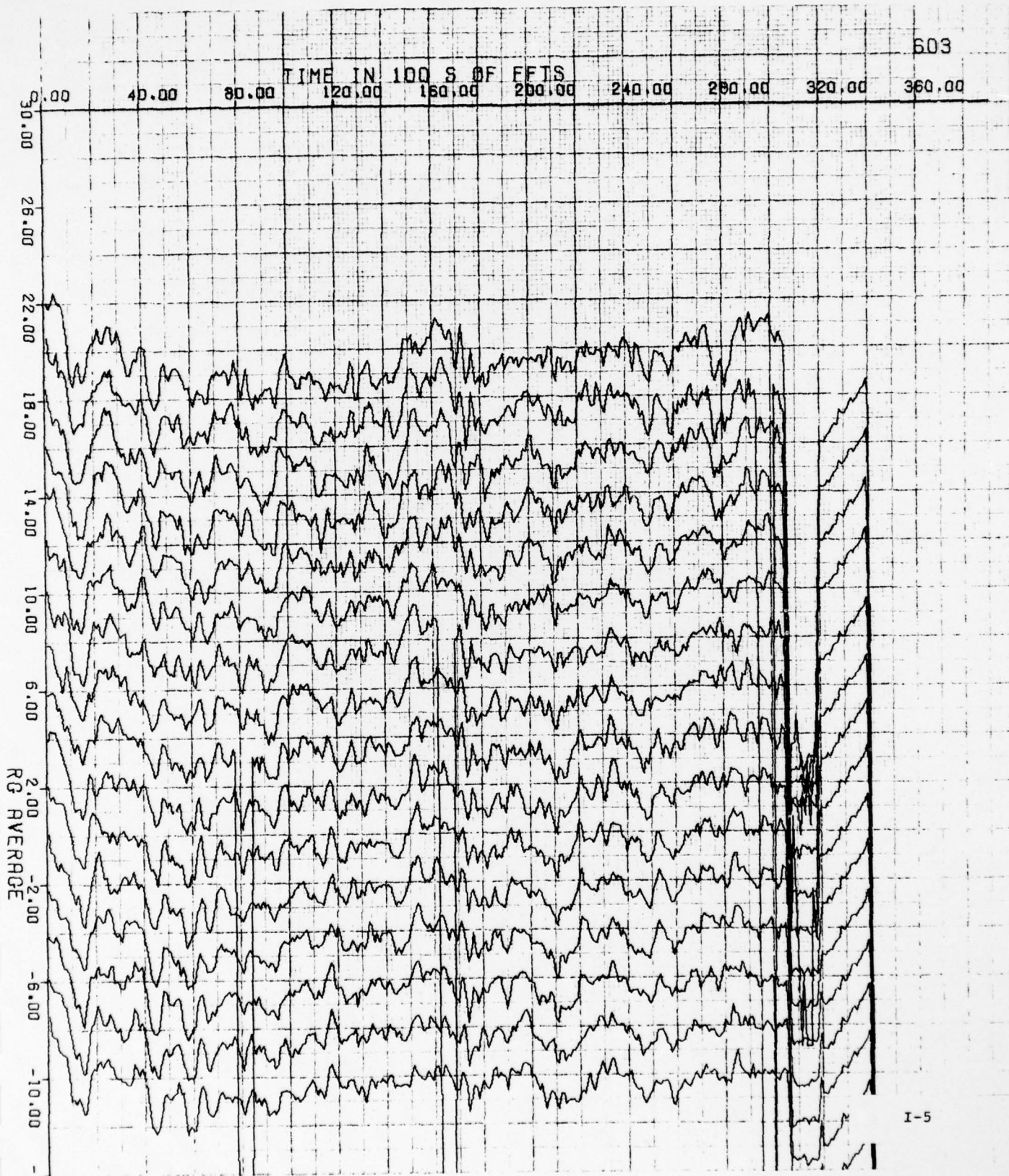
The sharp drop in amplitude in all of the range gates is the sample of receiver noise and the increase in amplitude after the dropoff is the calibrate signal.

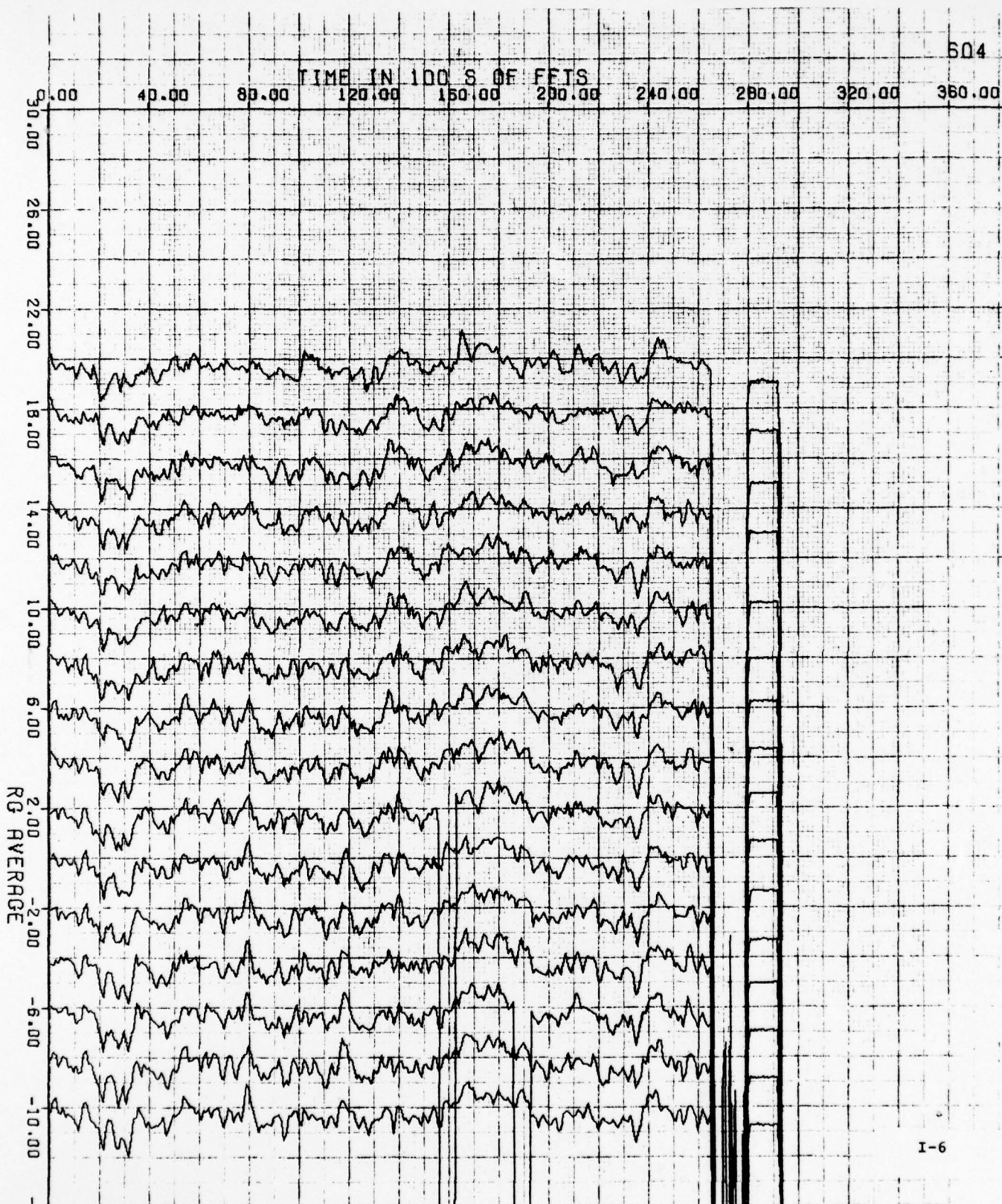
The plots are in order by flight and run.

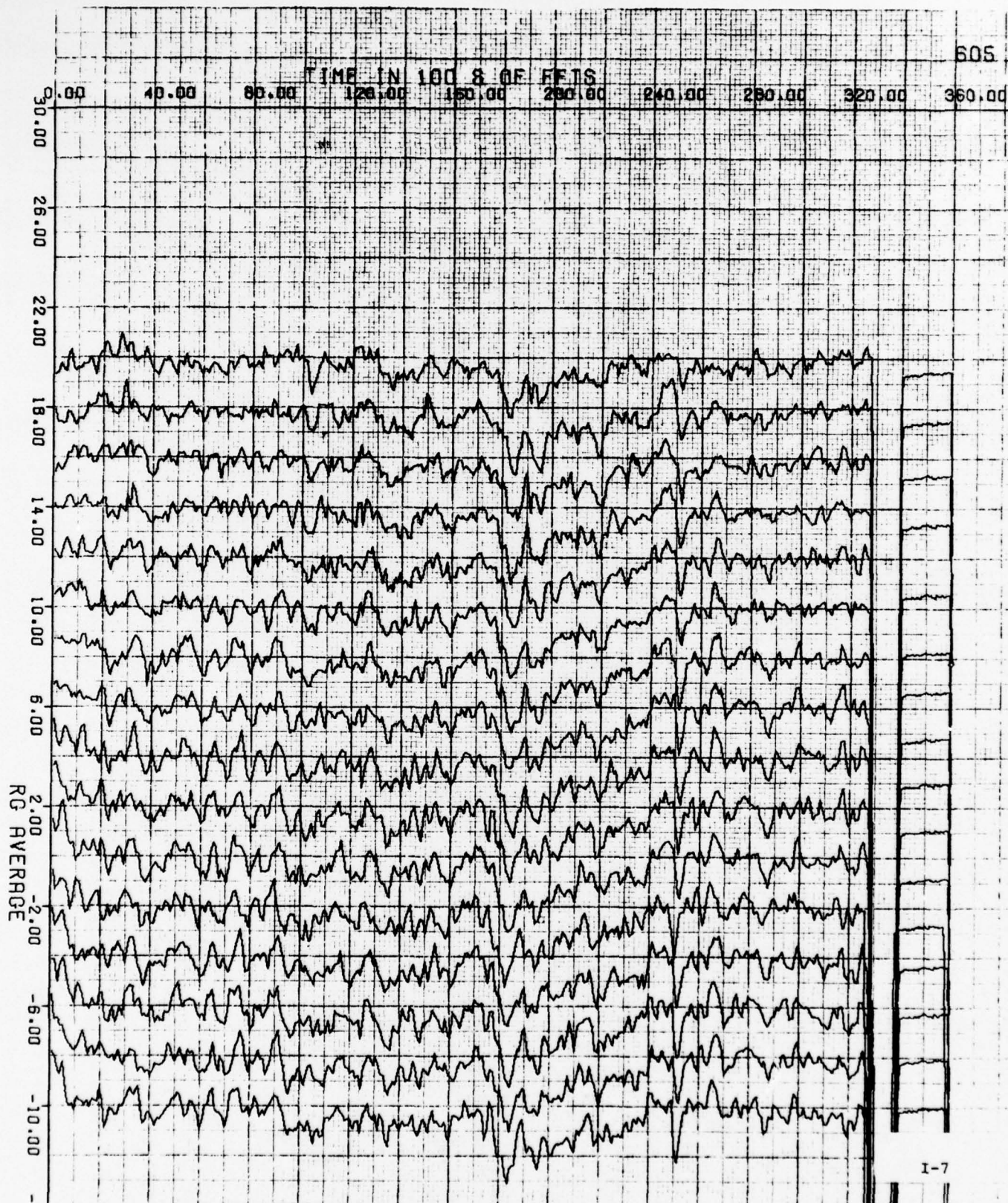


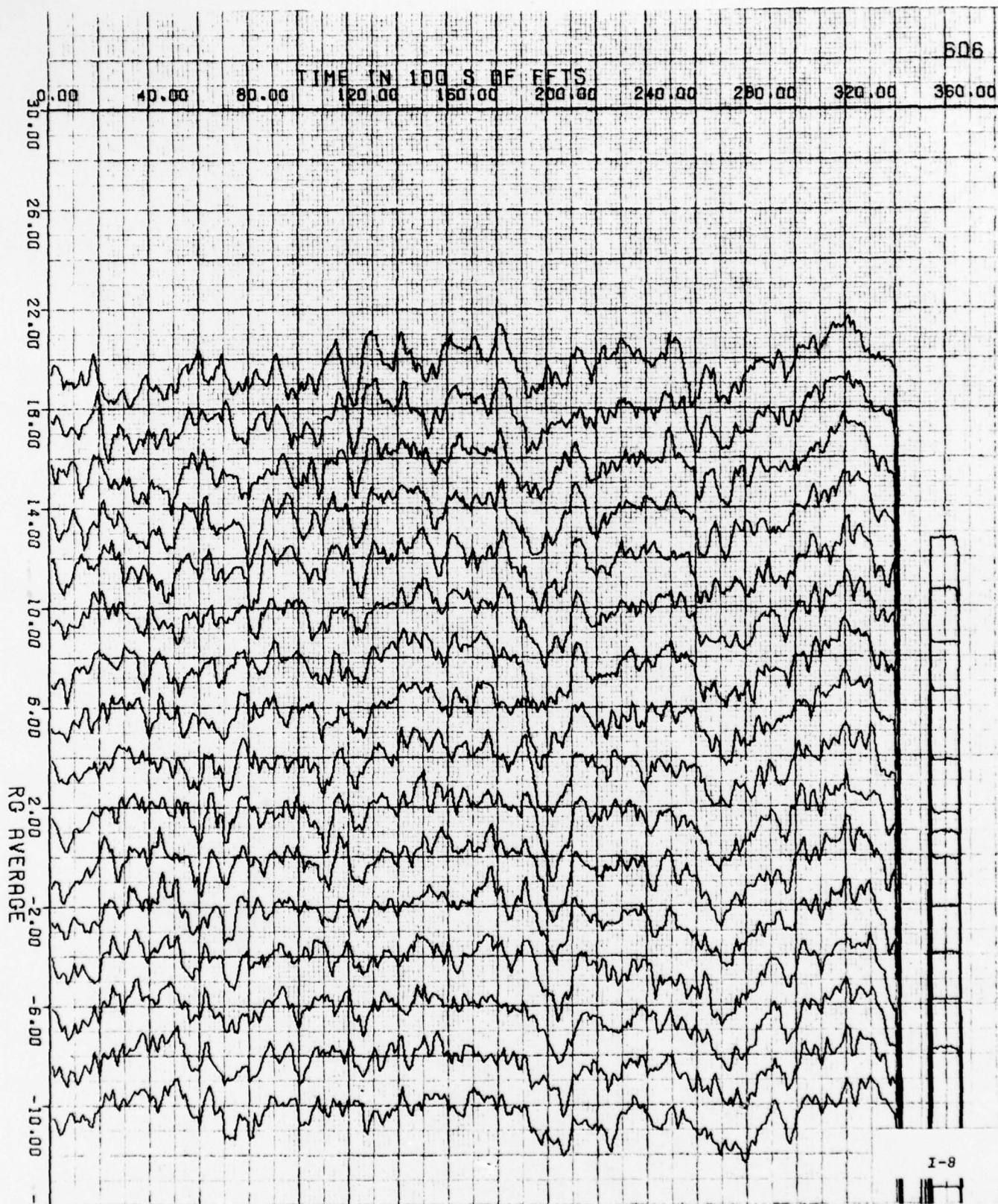






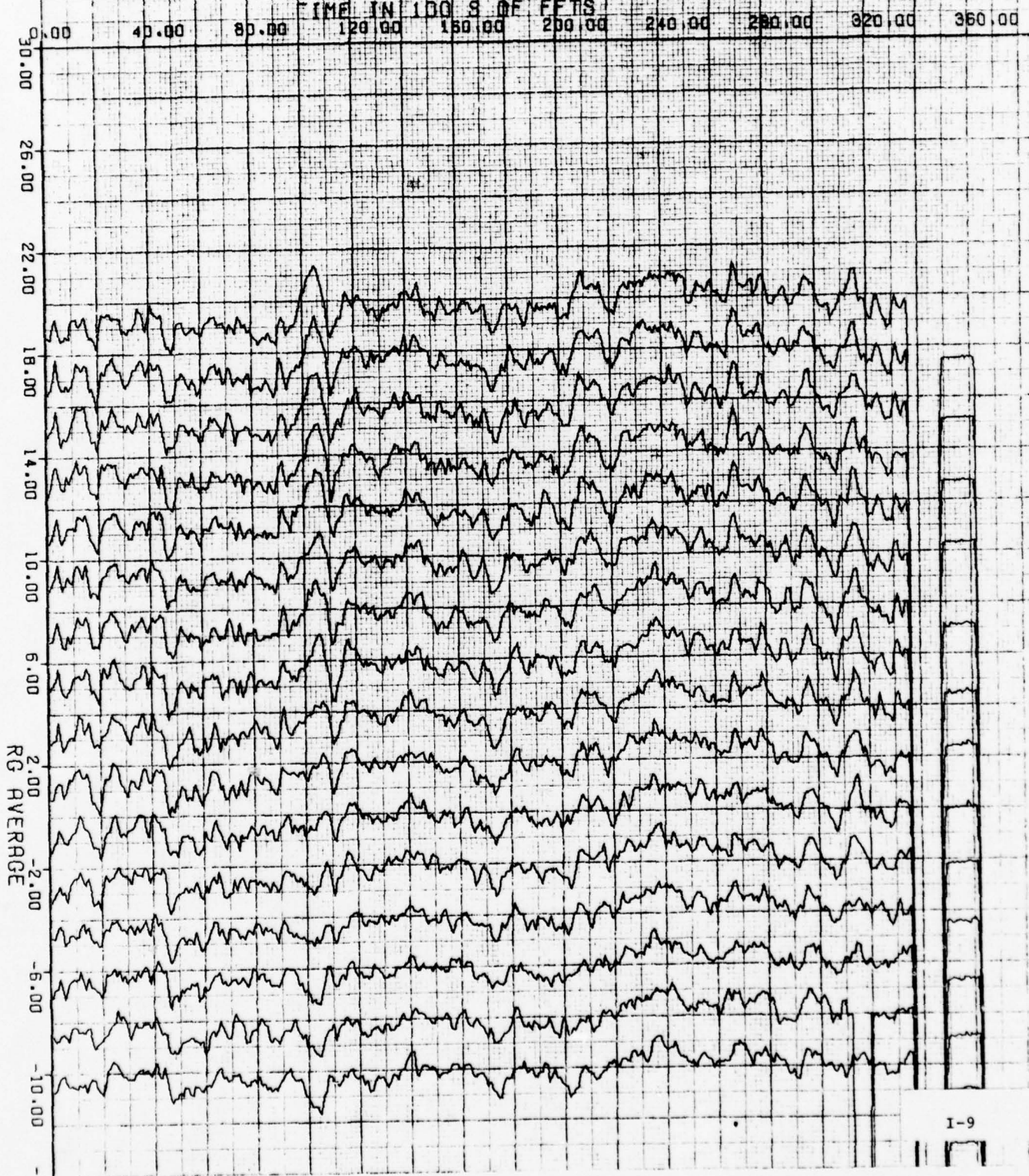


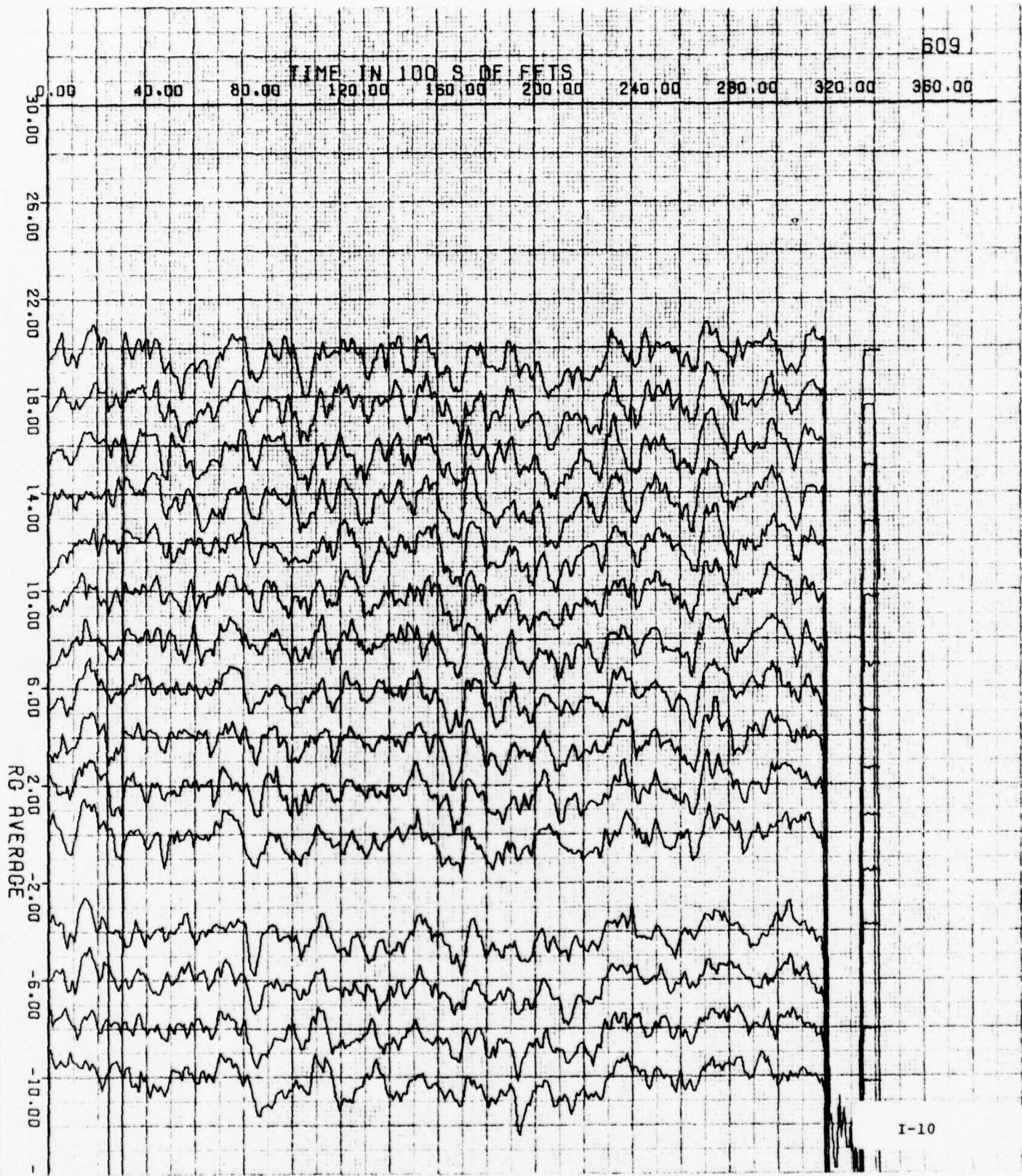


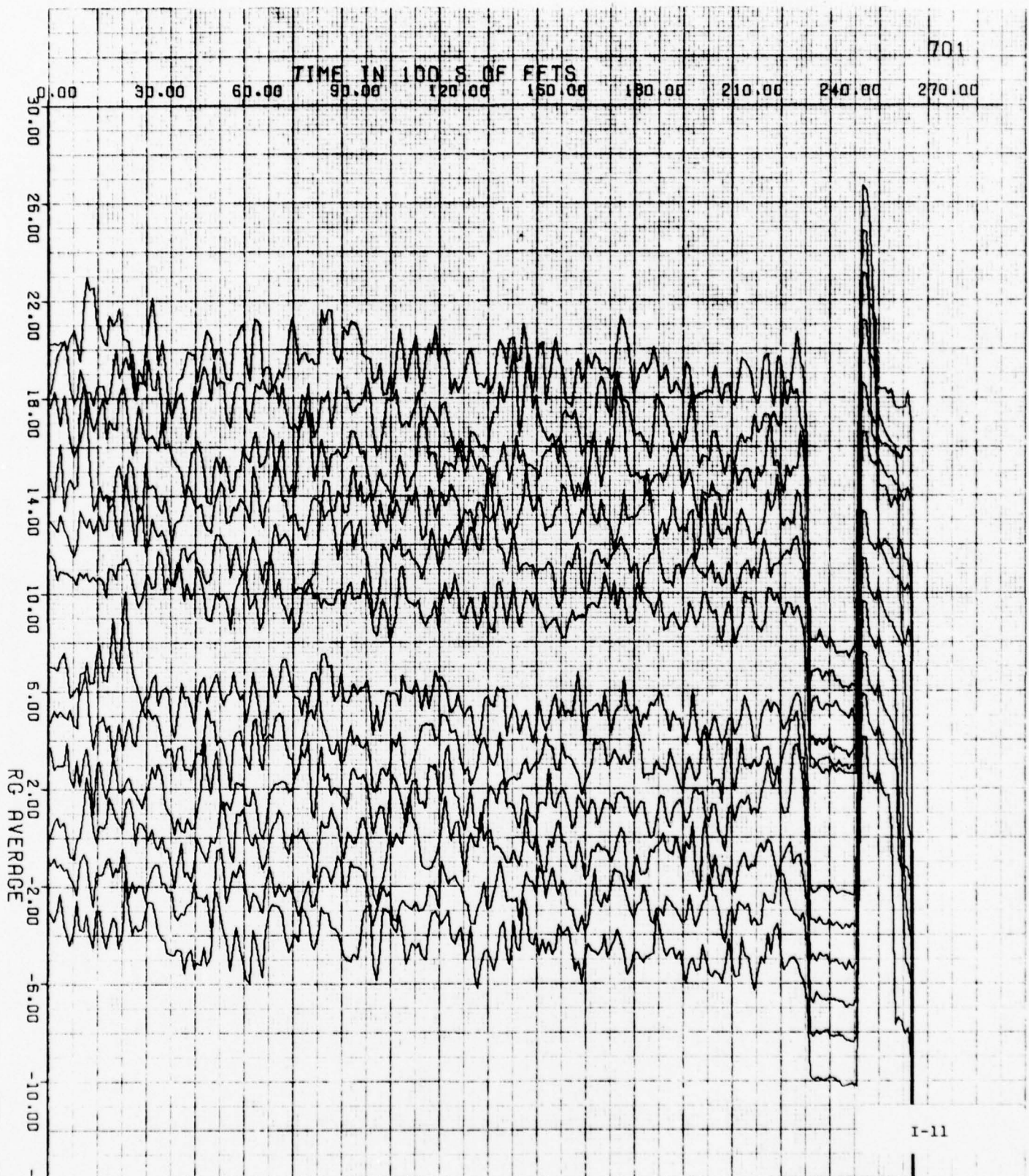


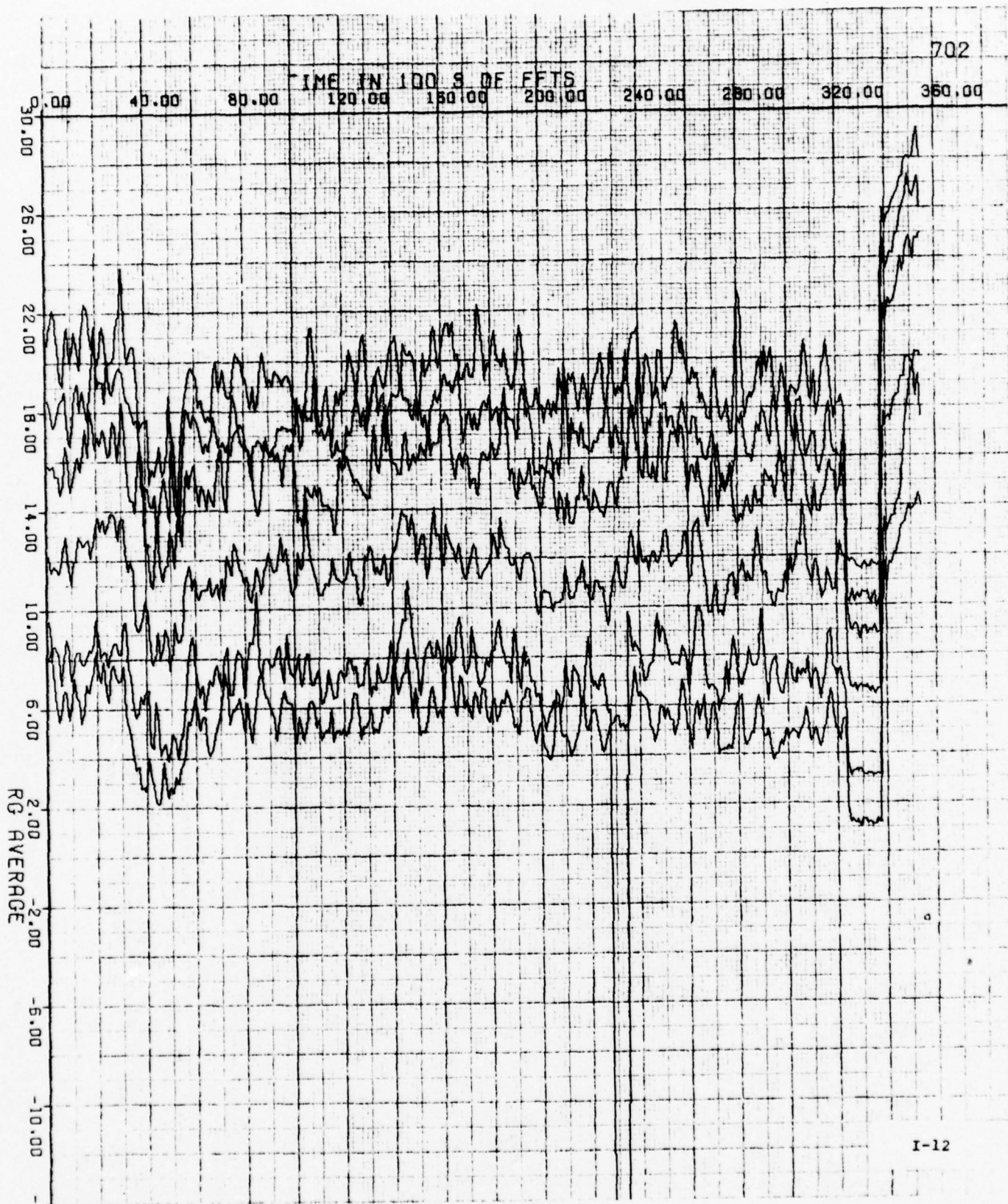
608

TIME IN 100 S OF FETS



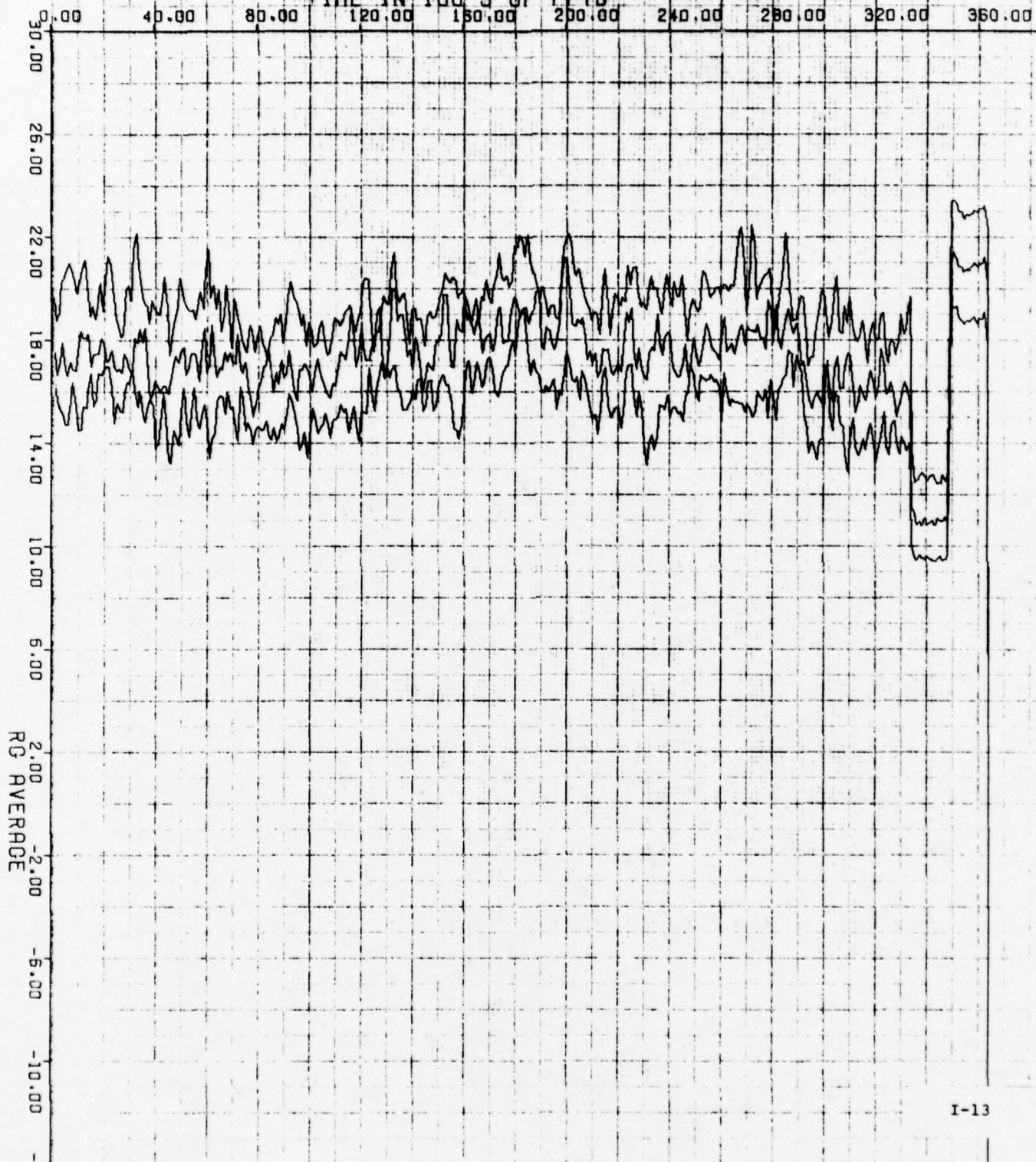


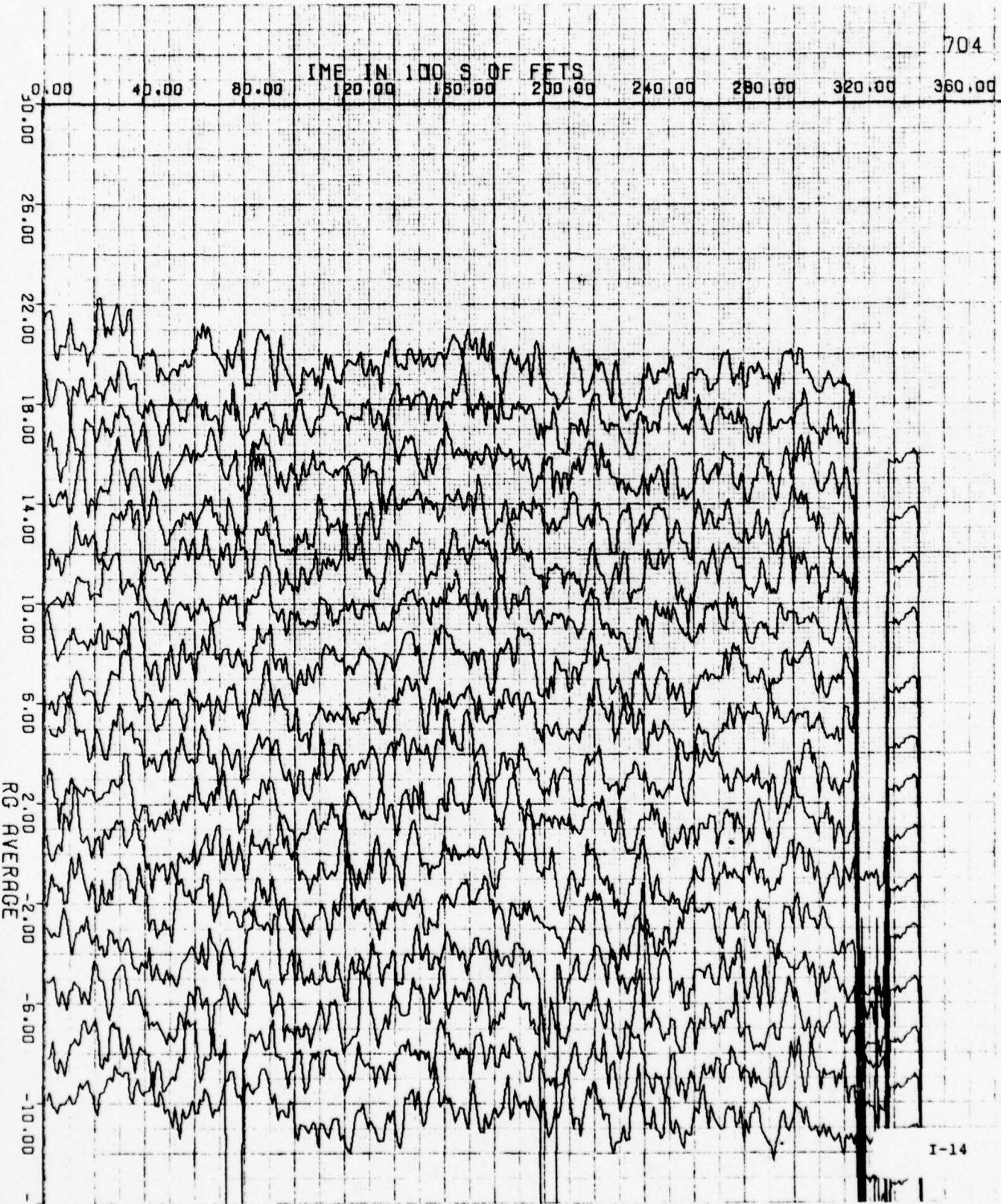


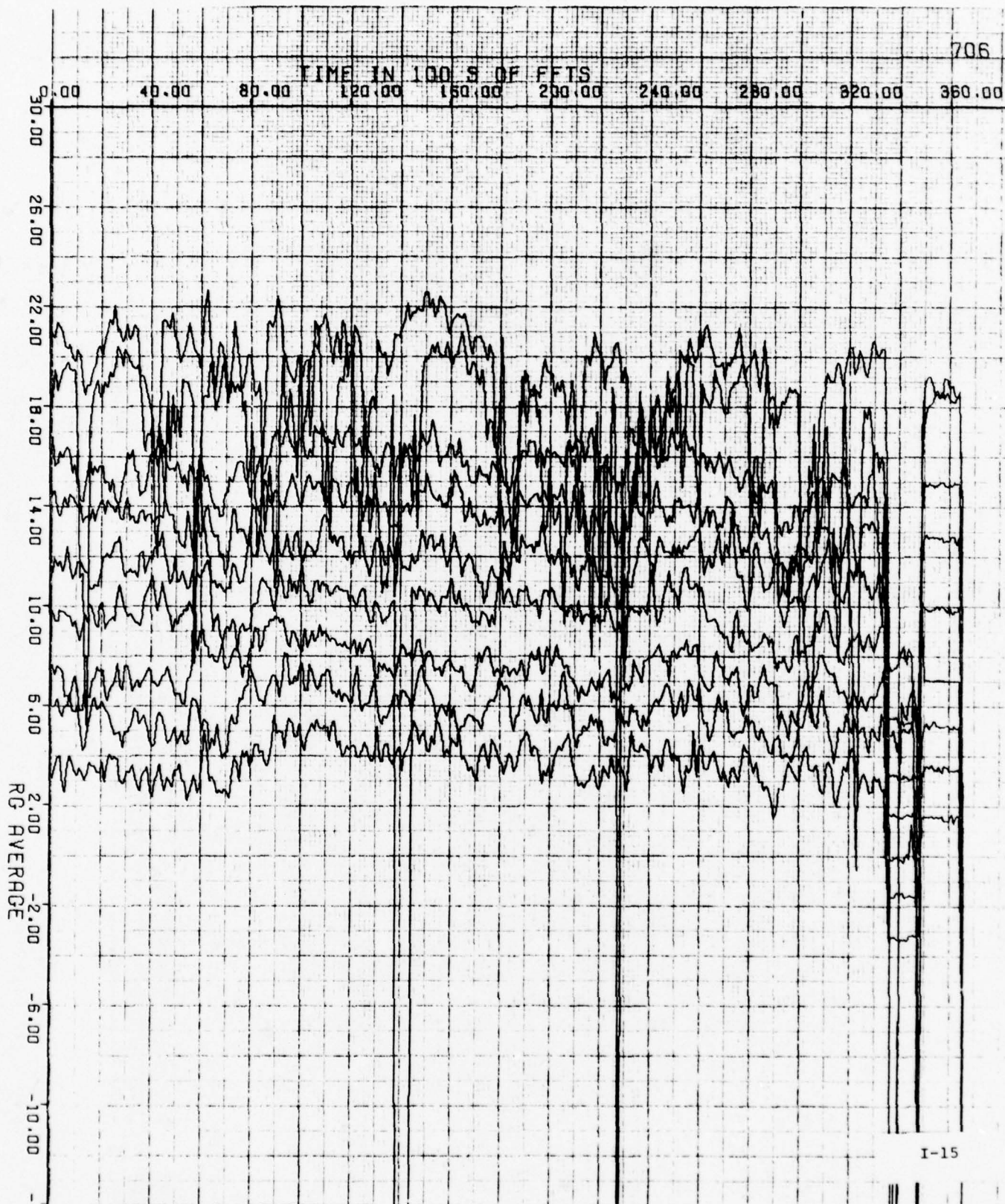


703

TIME IN 100 S OF FETS

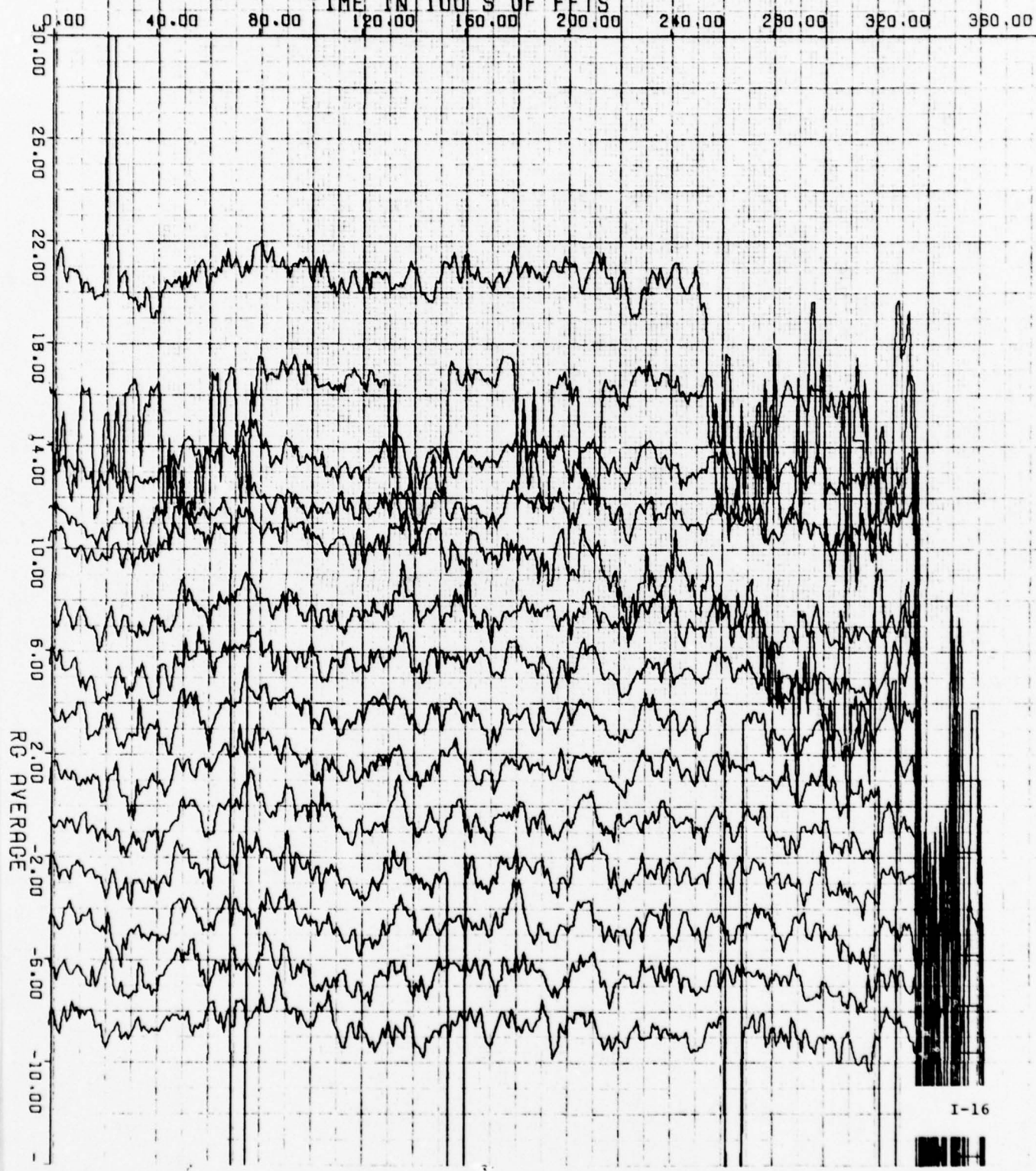






707

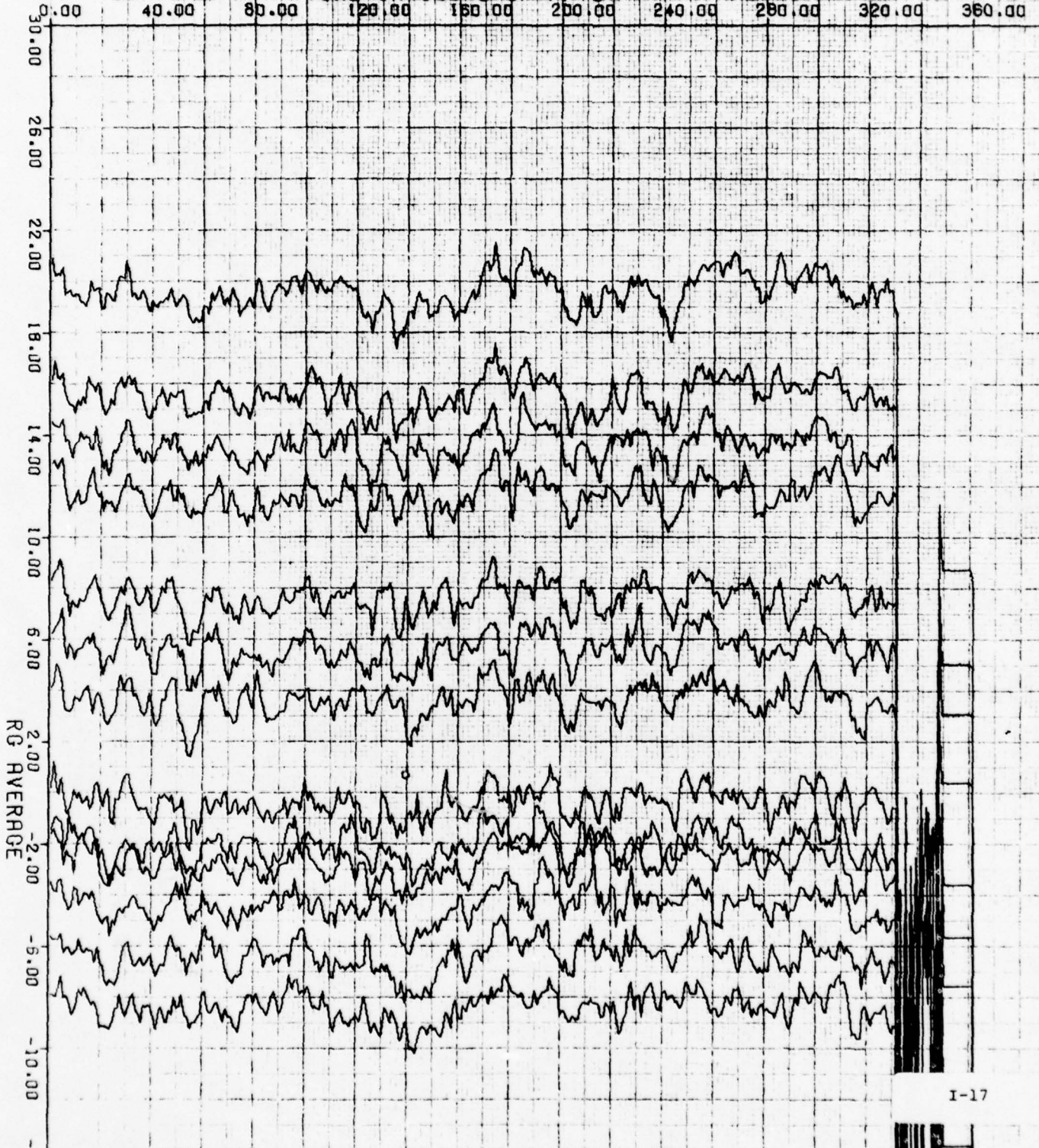
TIME IN 100 S OF FTS

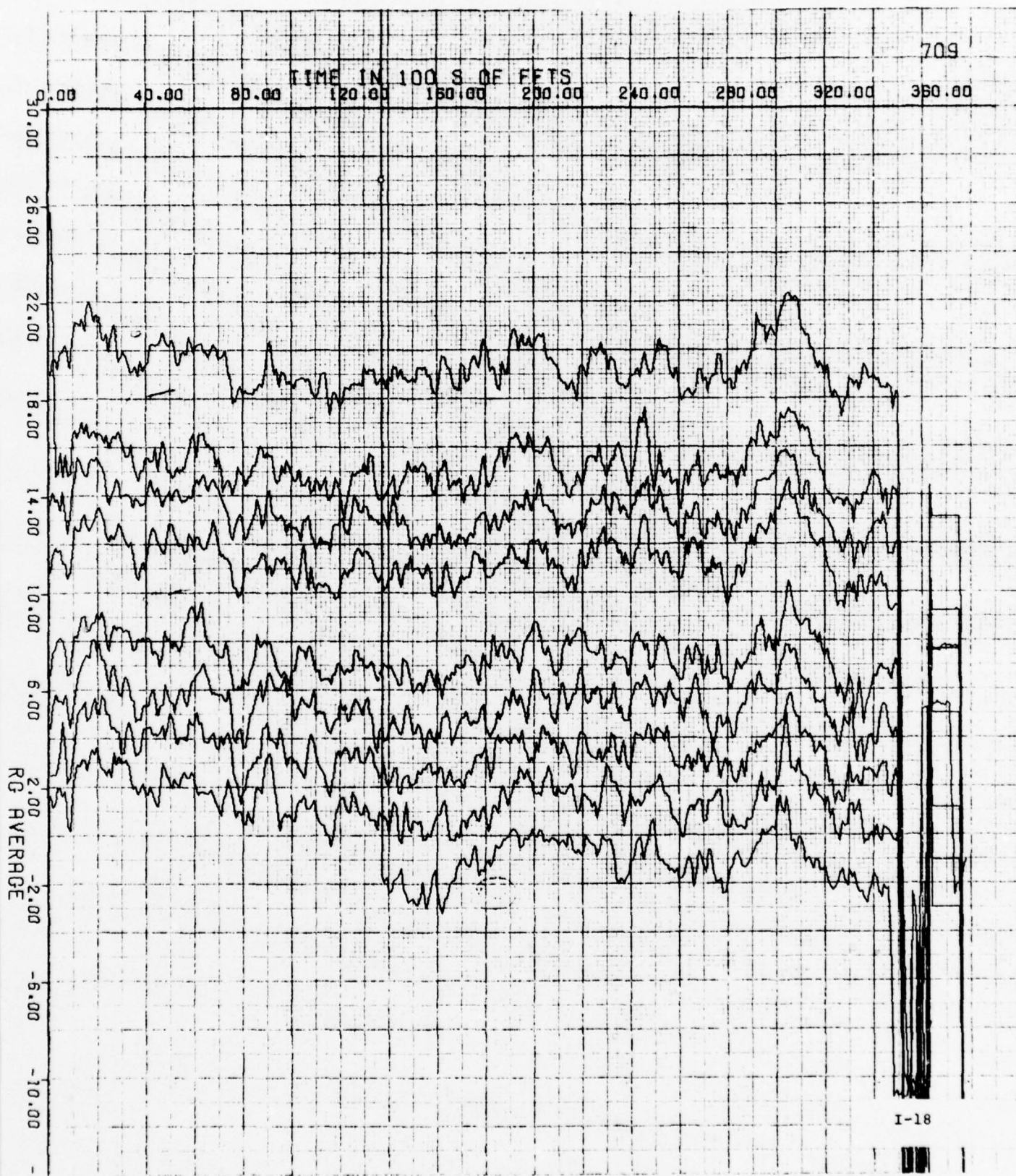


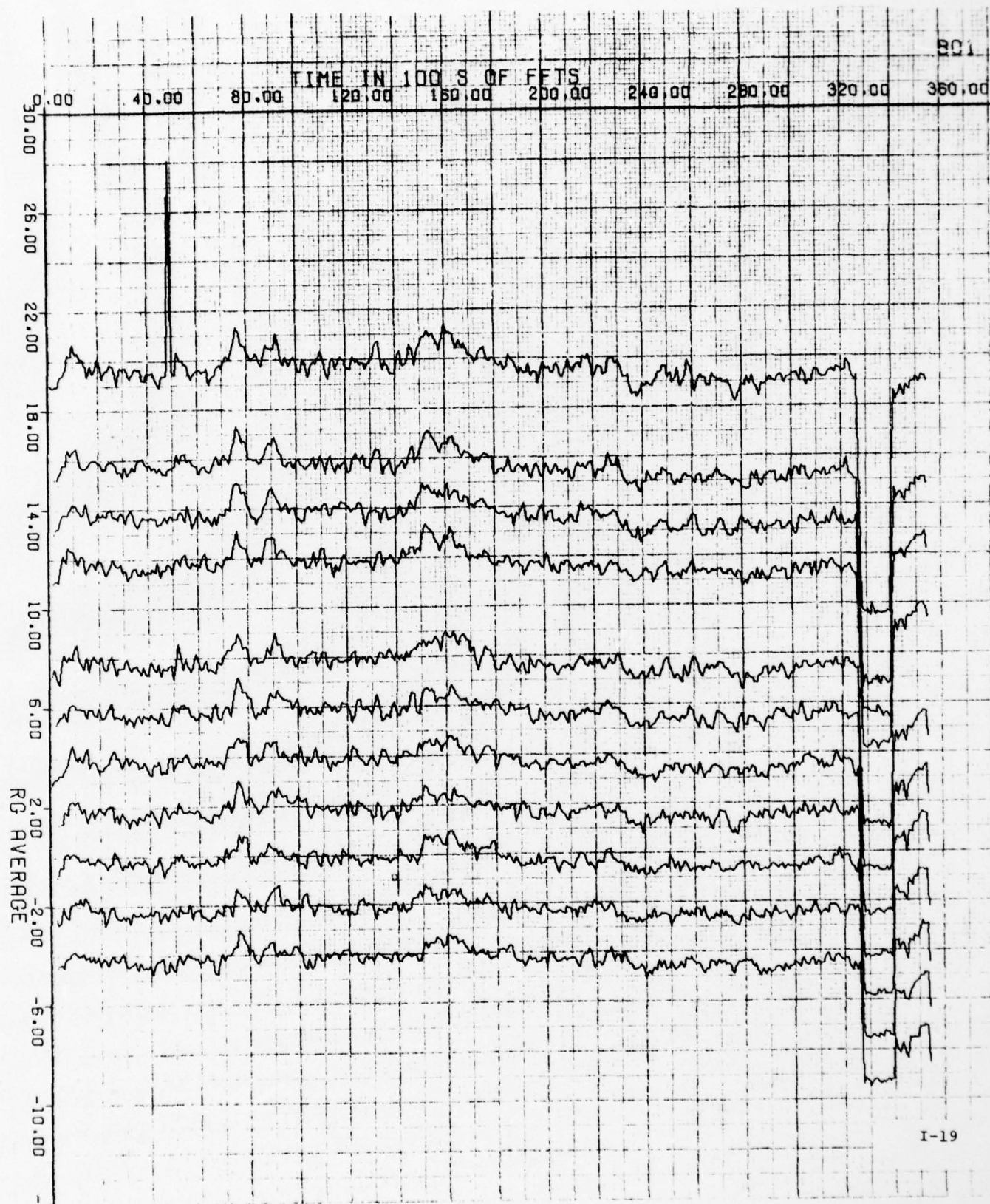
I-16

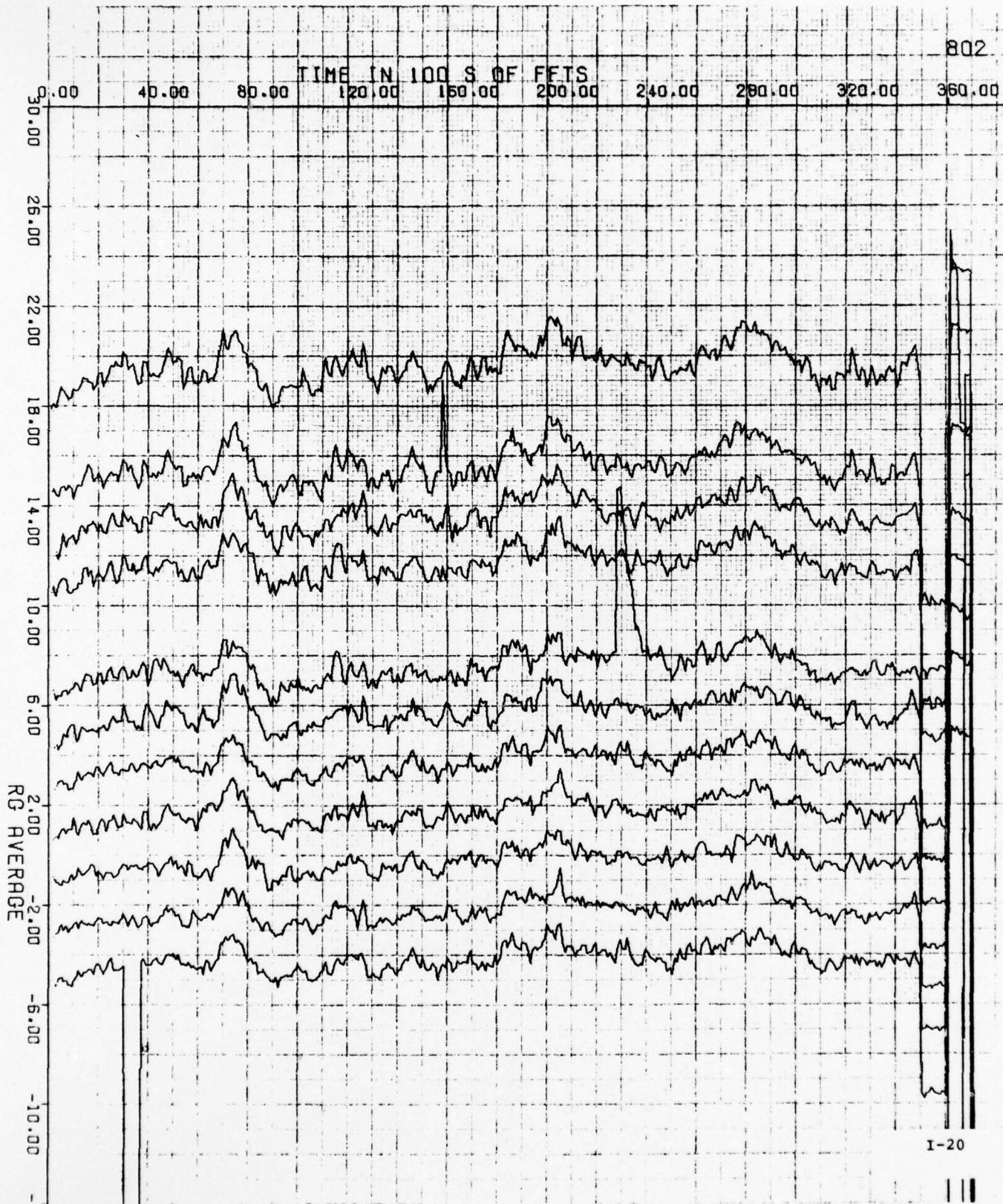
0.708

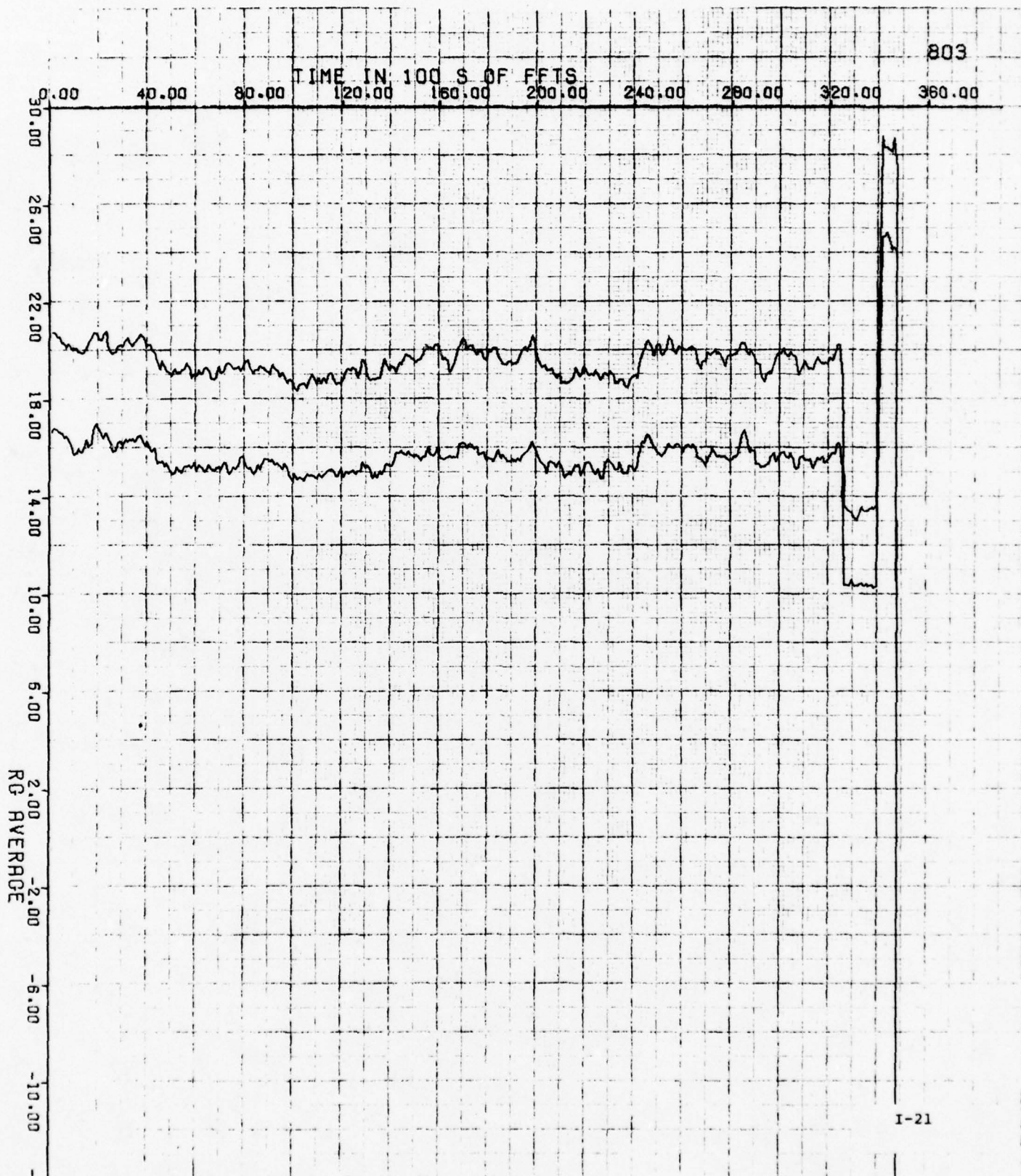
TIME IN 100 S. OF FETS

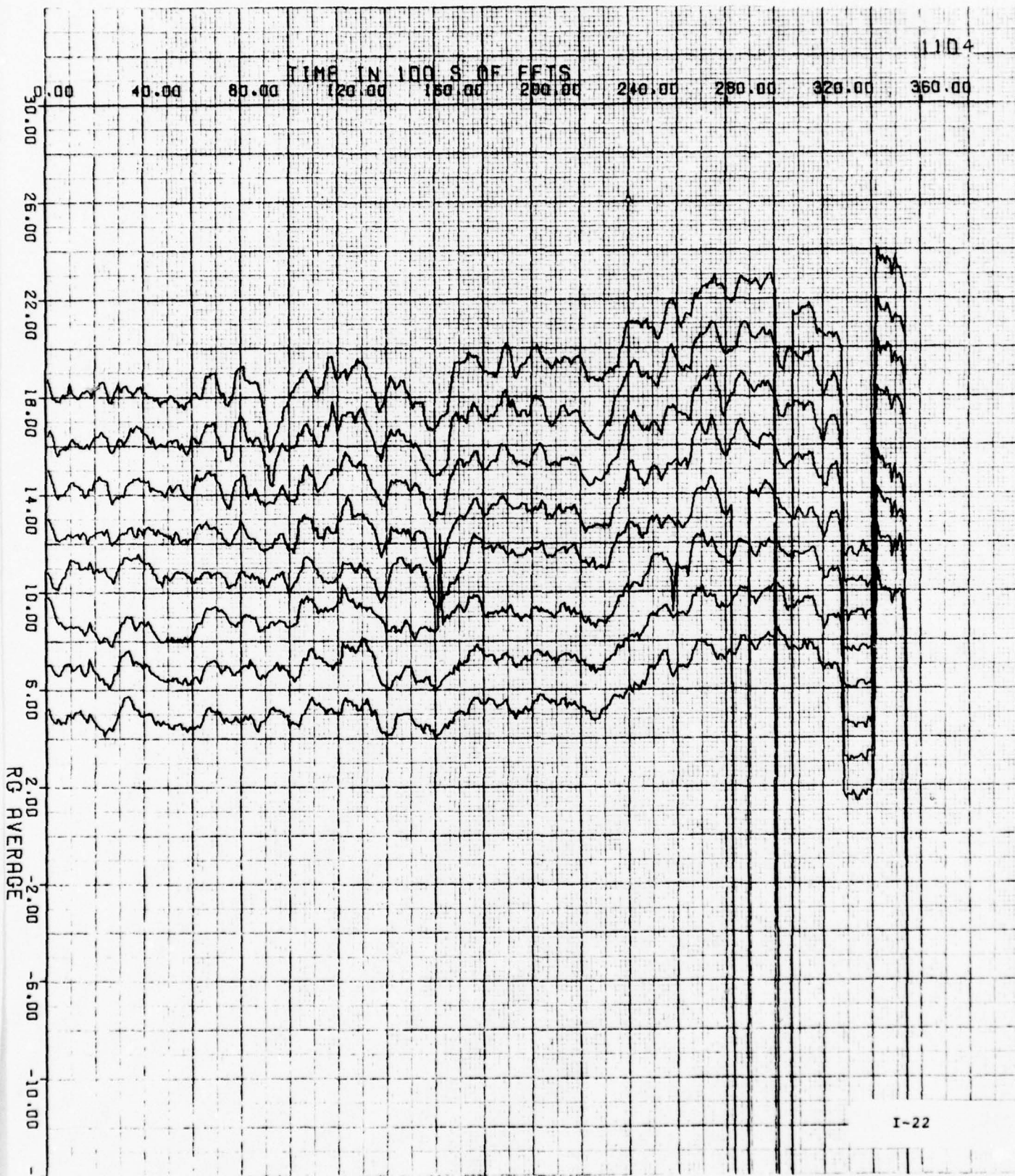


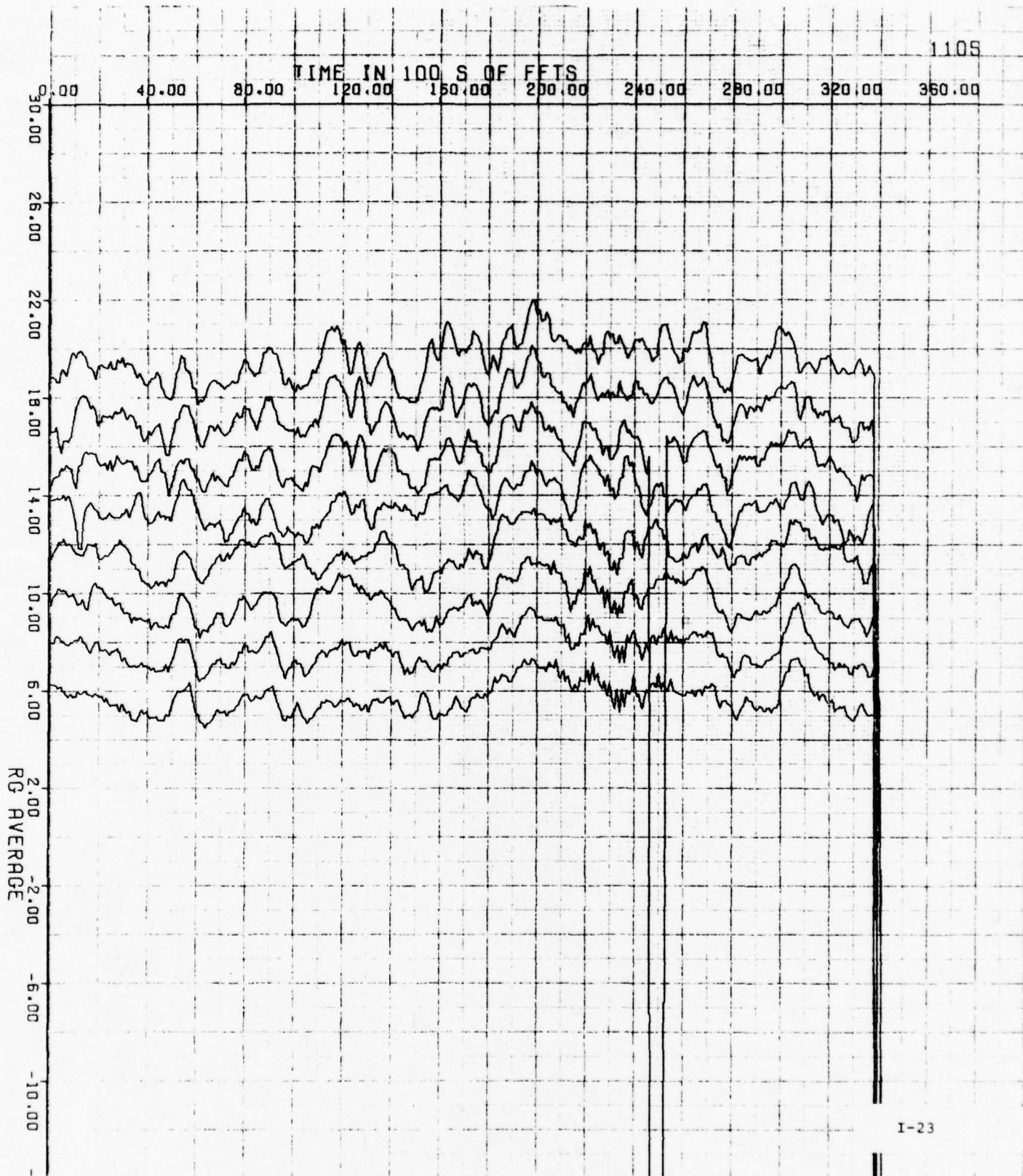


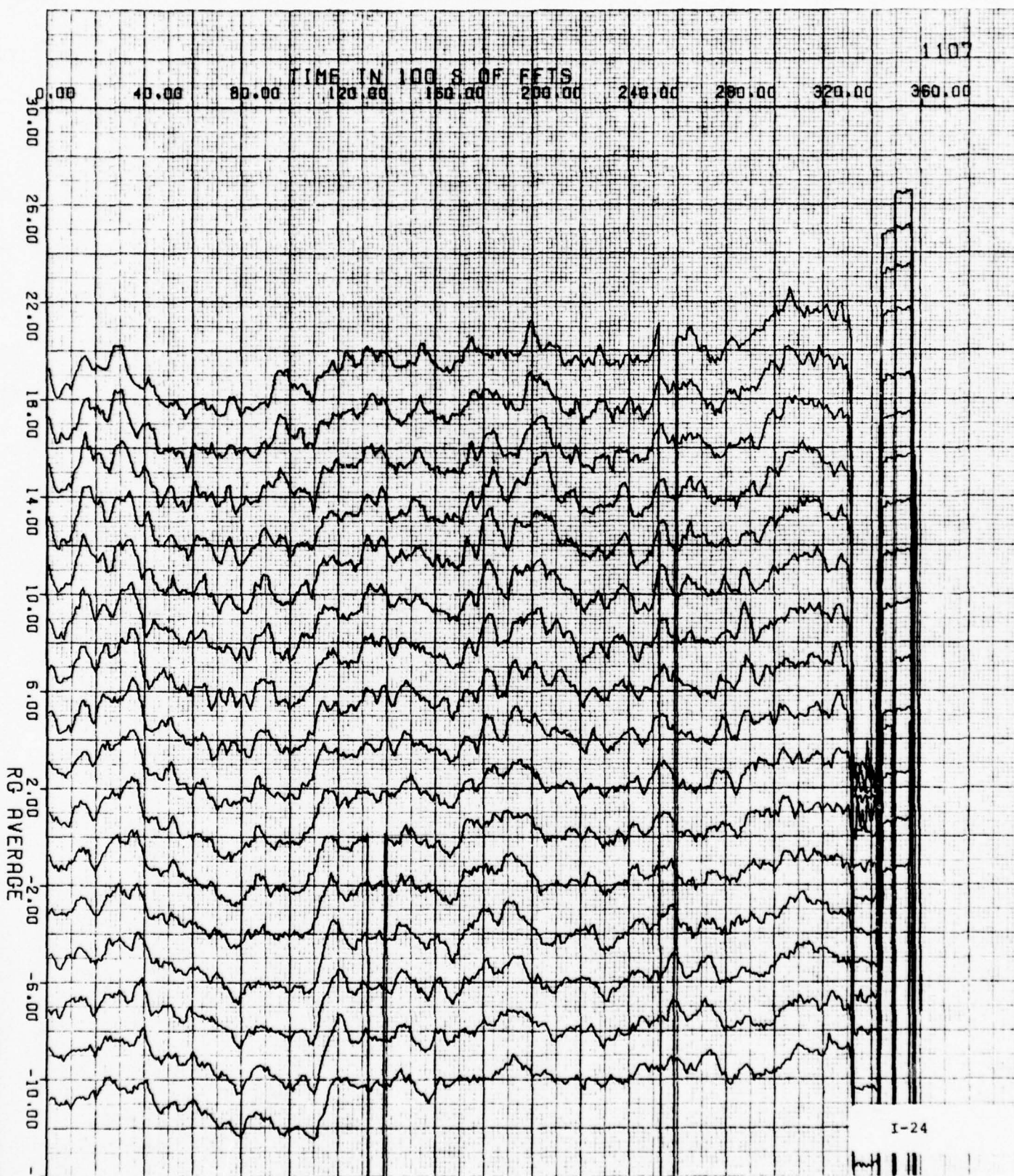


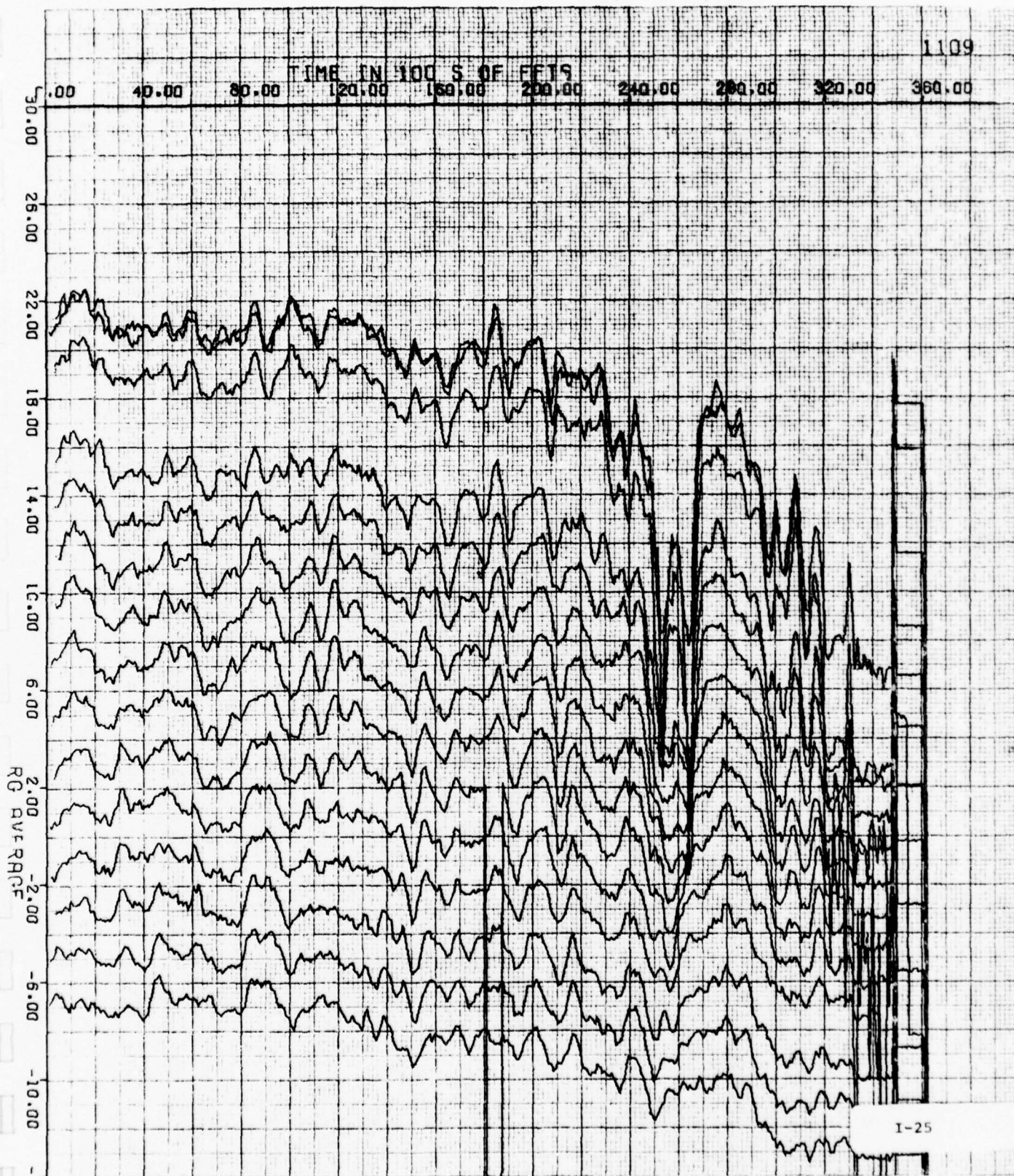


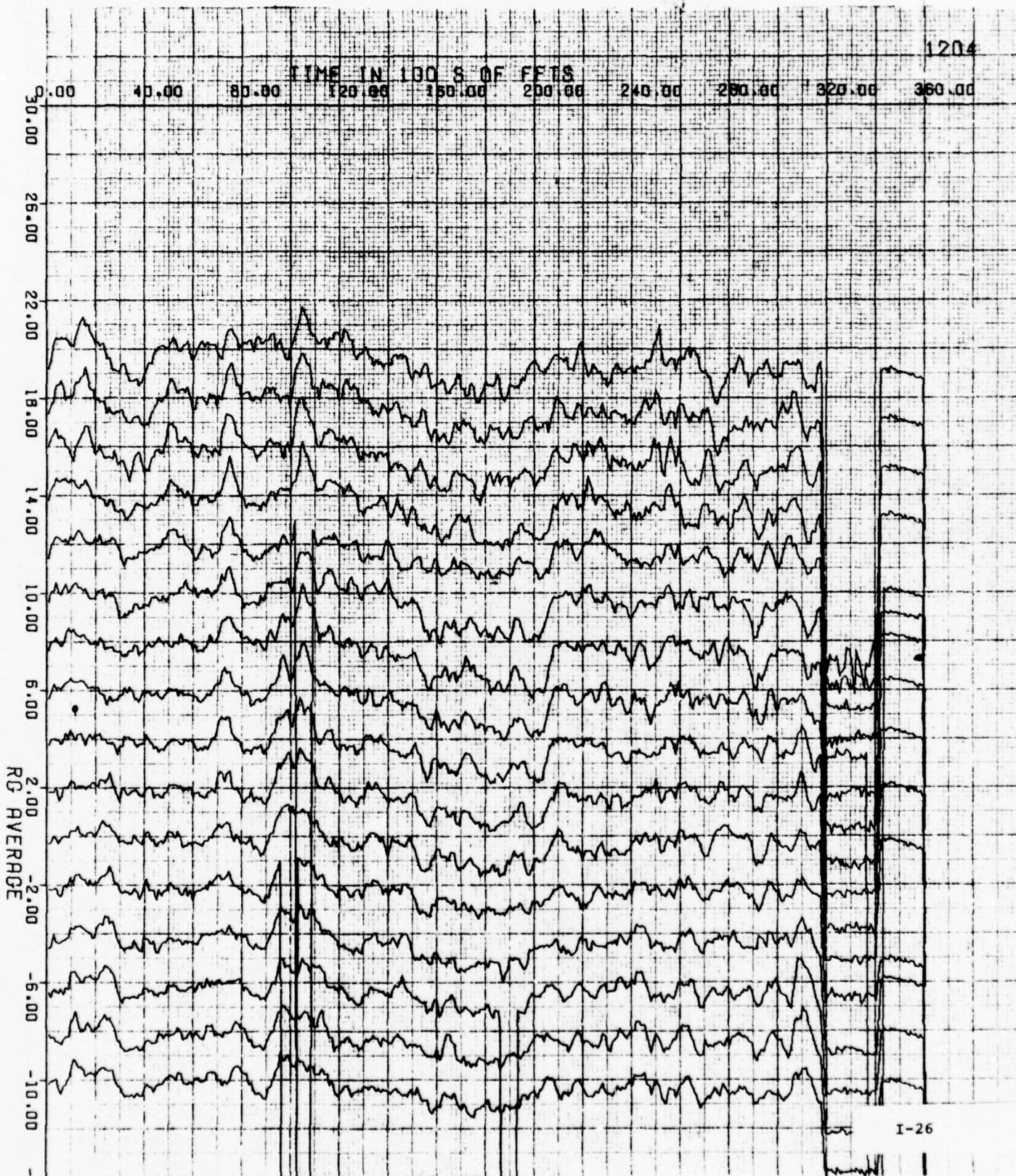








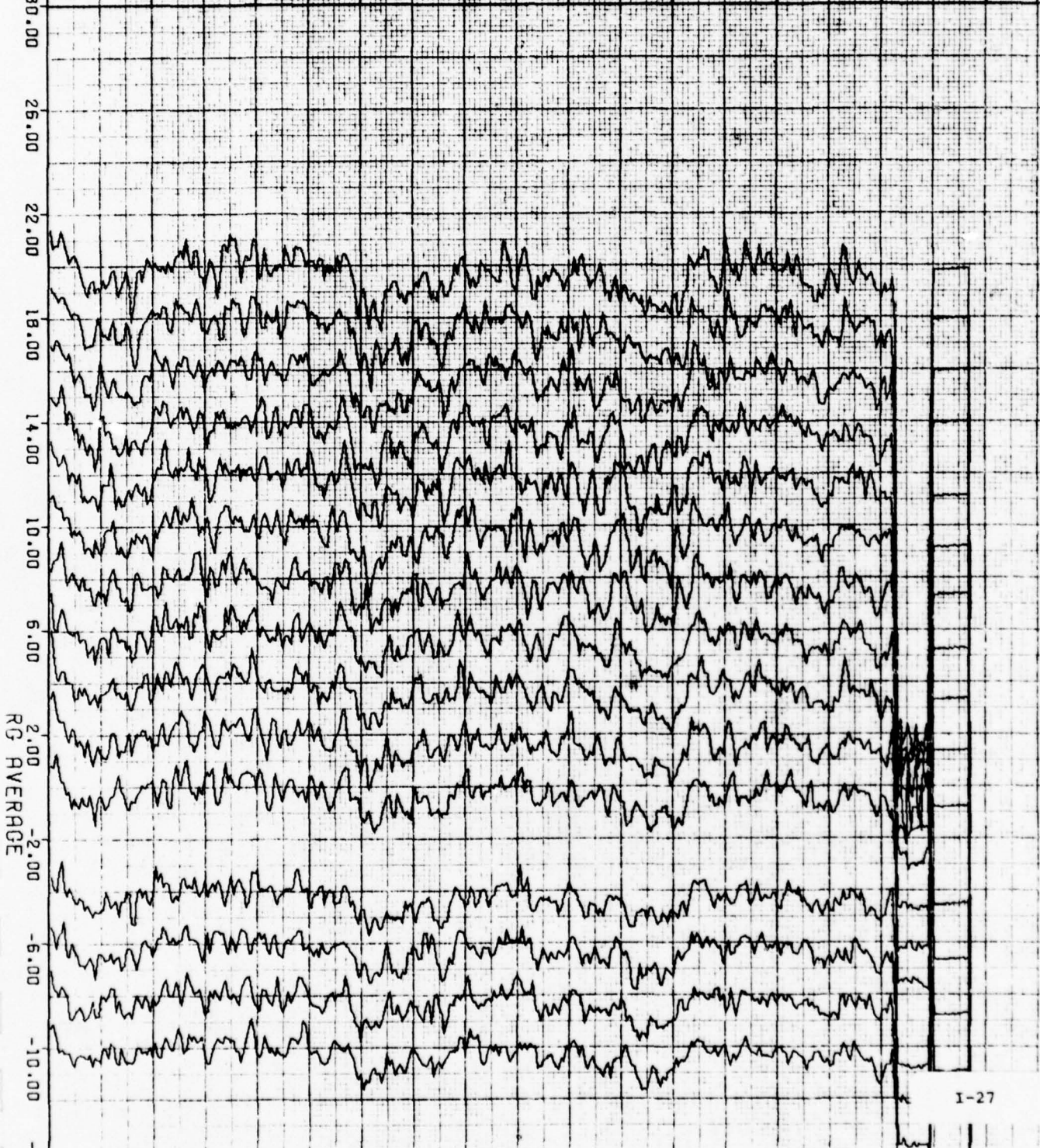


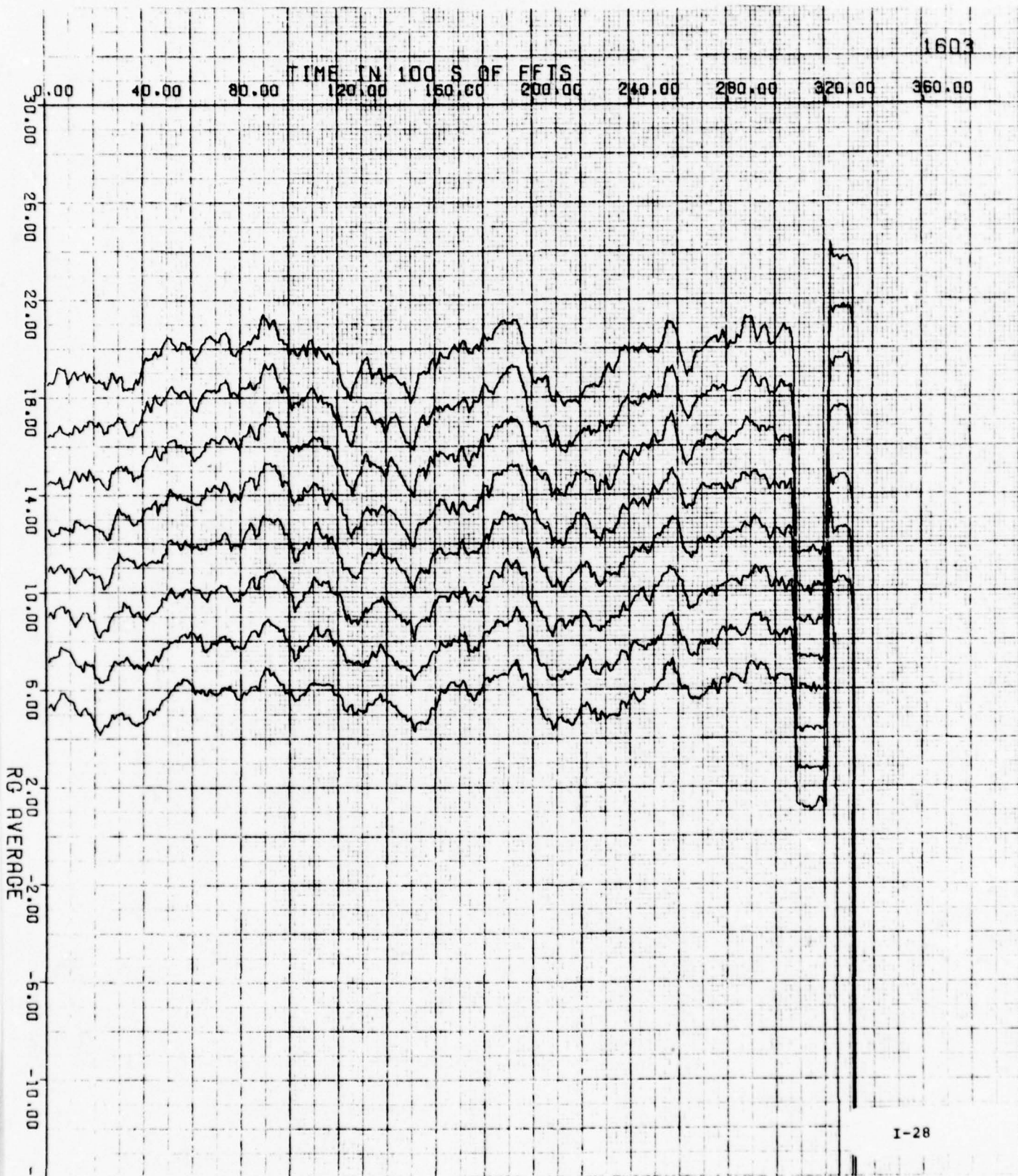


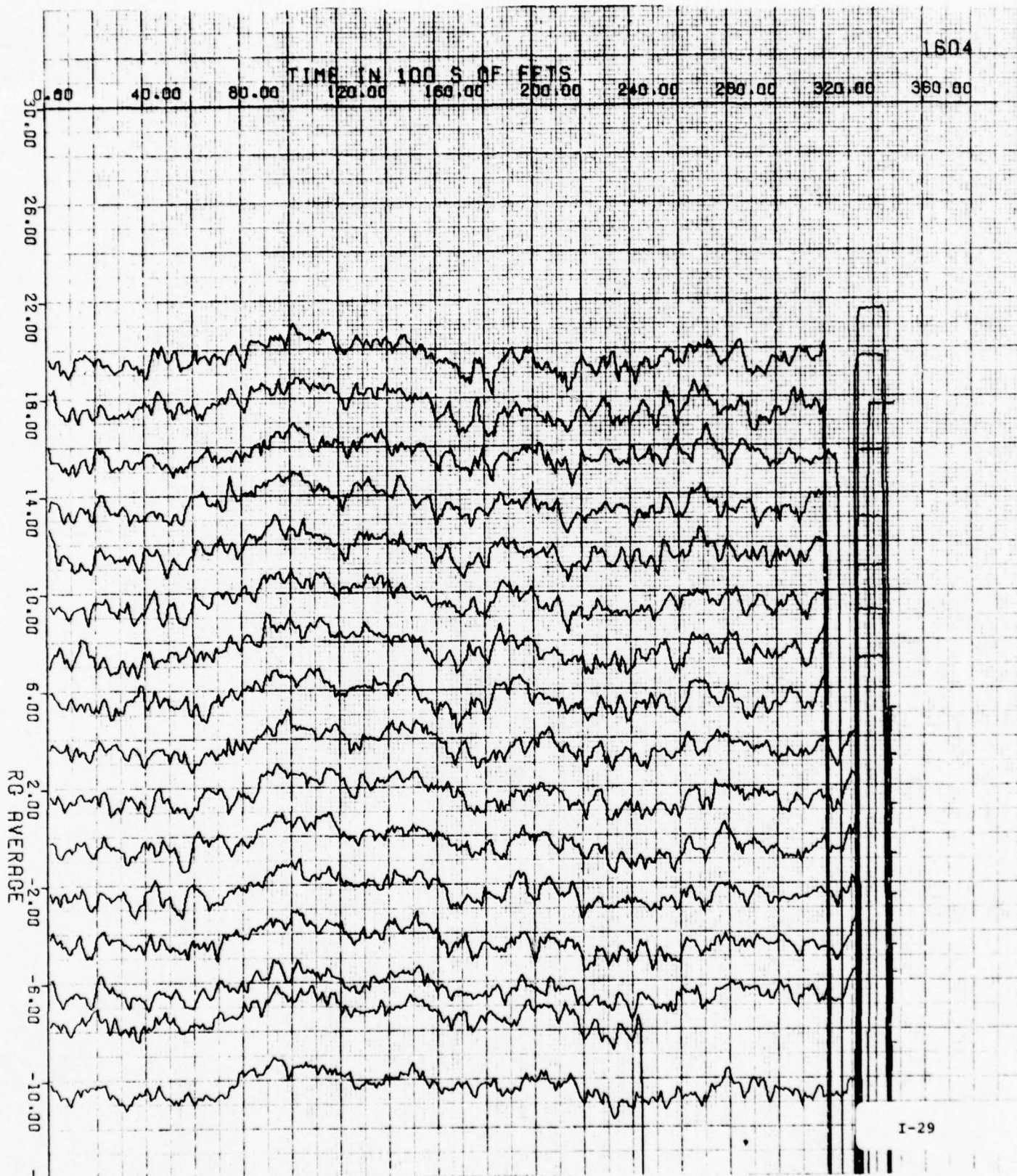
1602

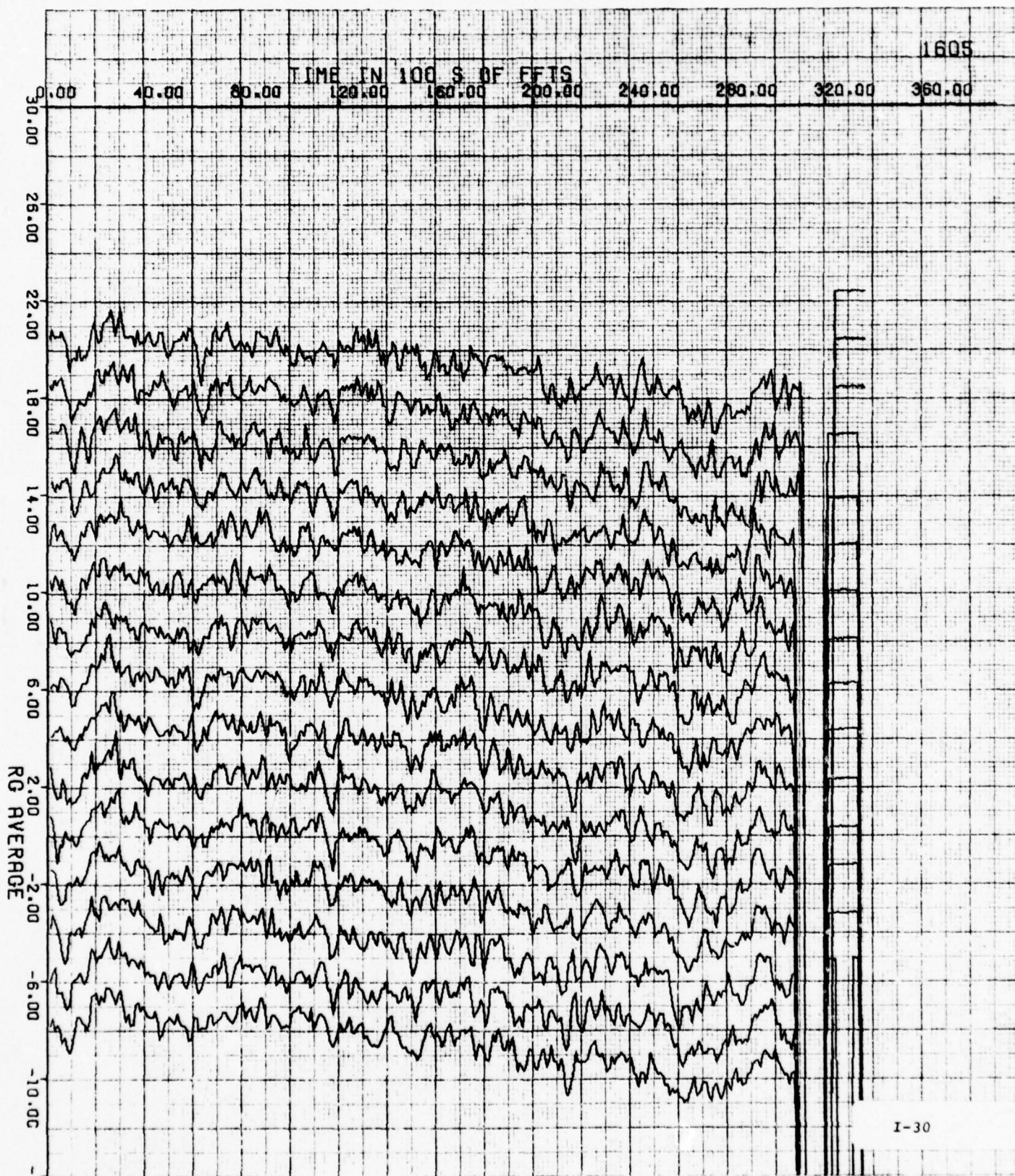
TIME IN 100 S OF FTS

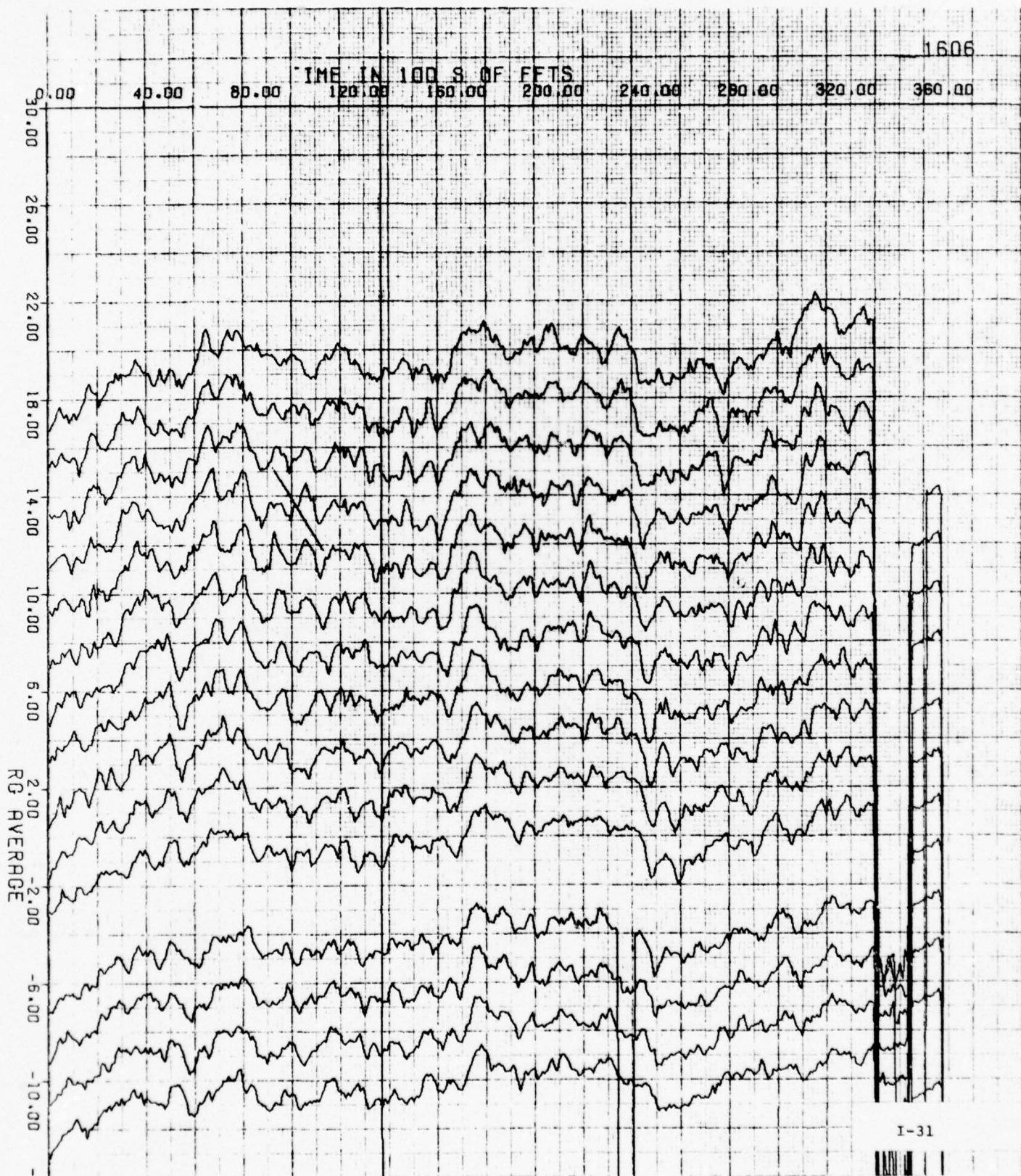
0.00 40.00 80.00 120.00 160.00 200.00 240.00 280.00 320.00 360.00

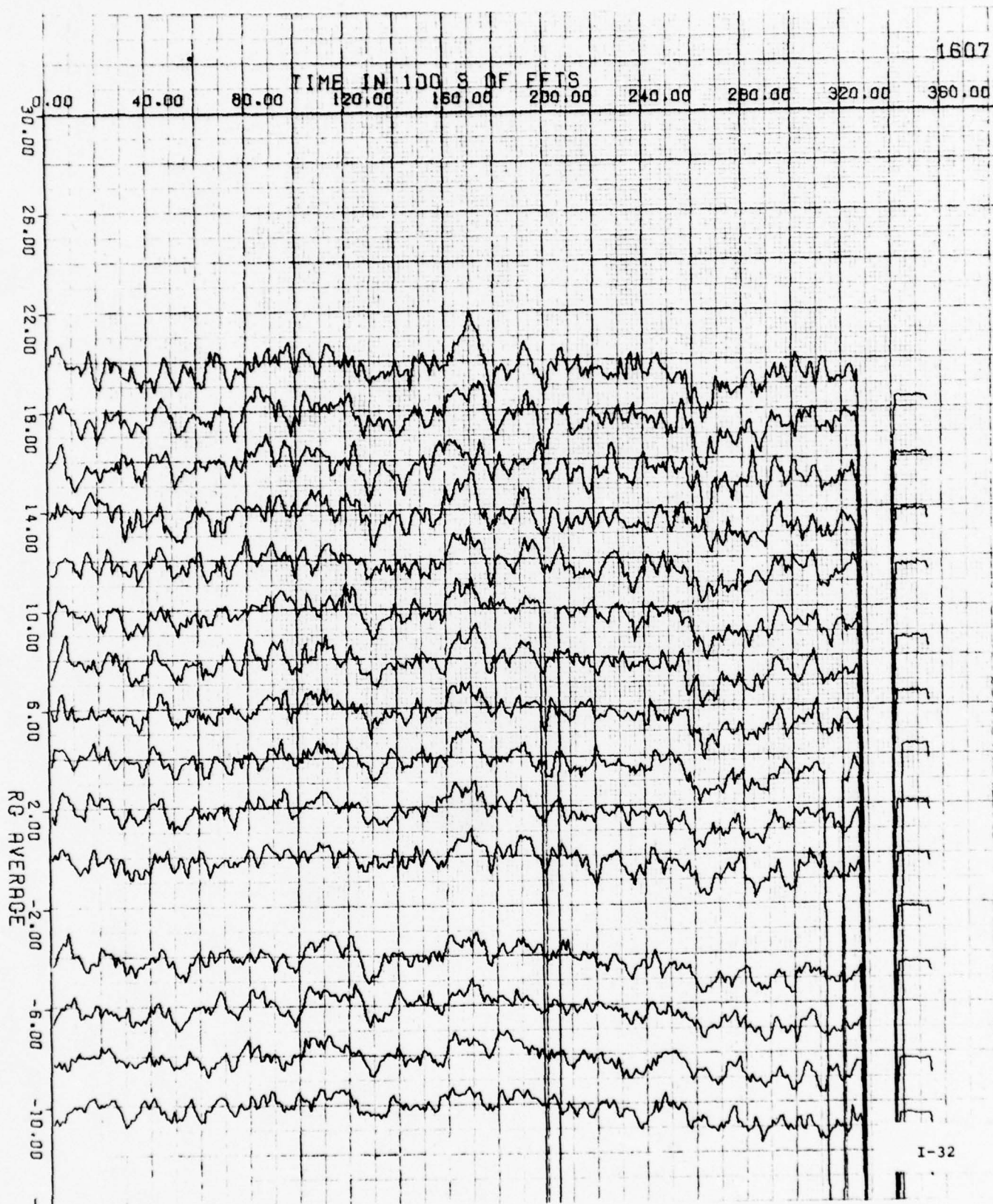






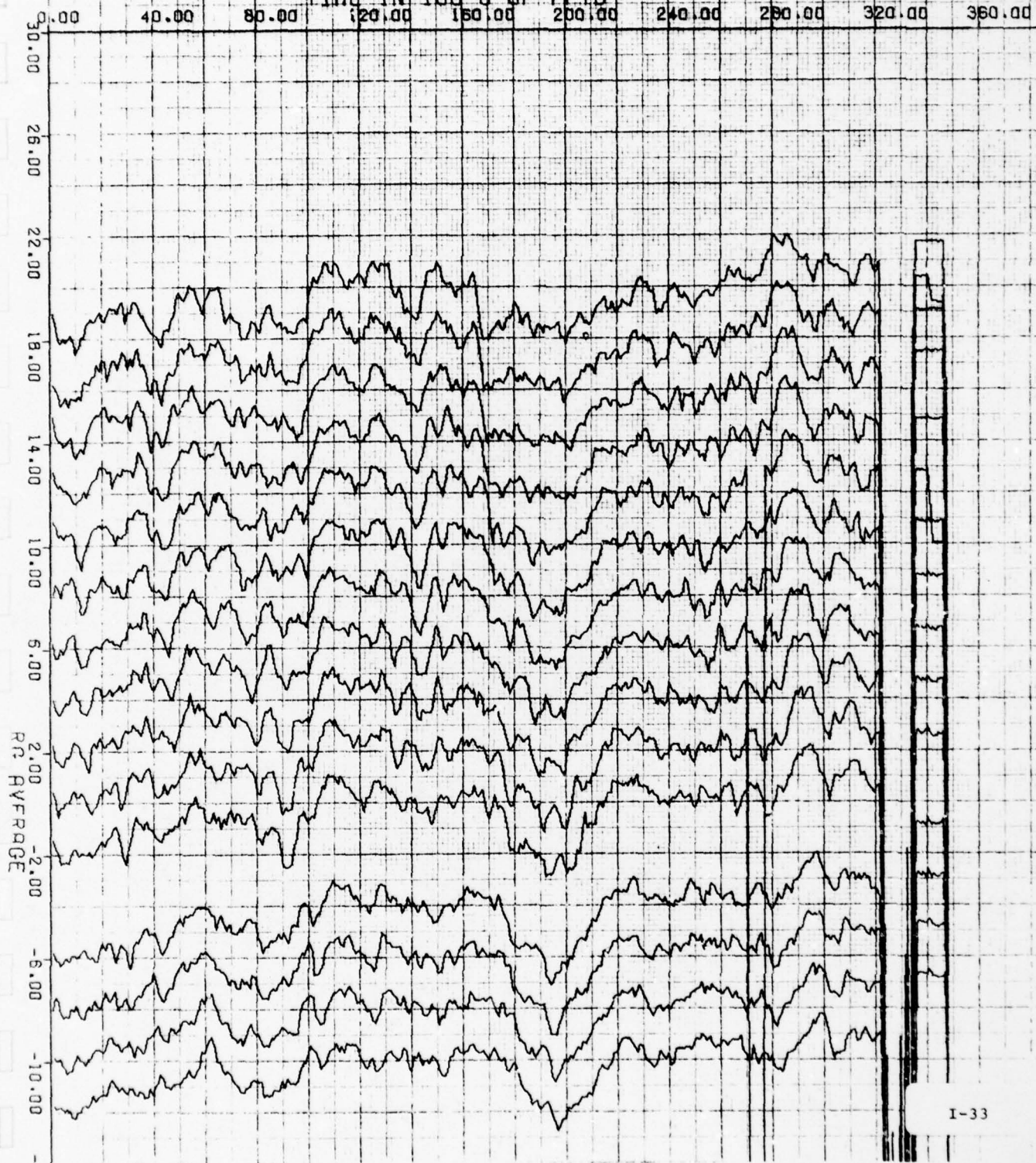




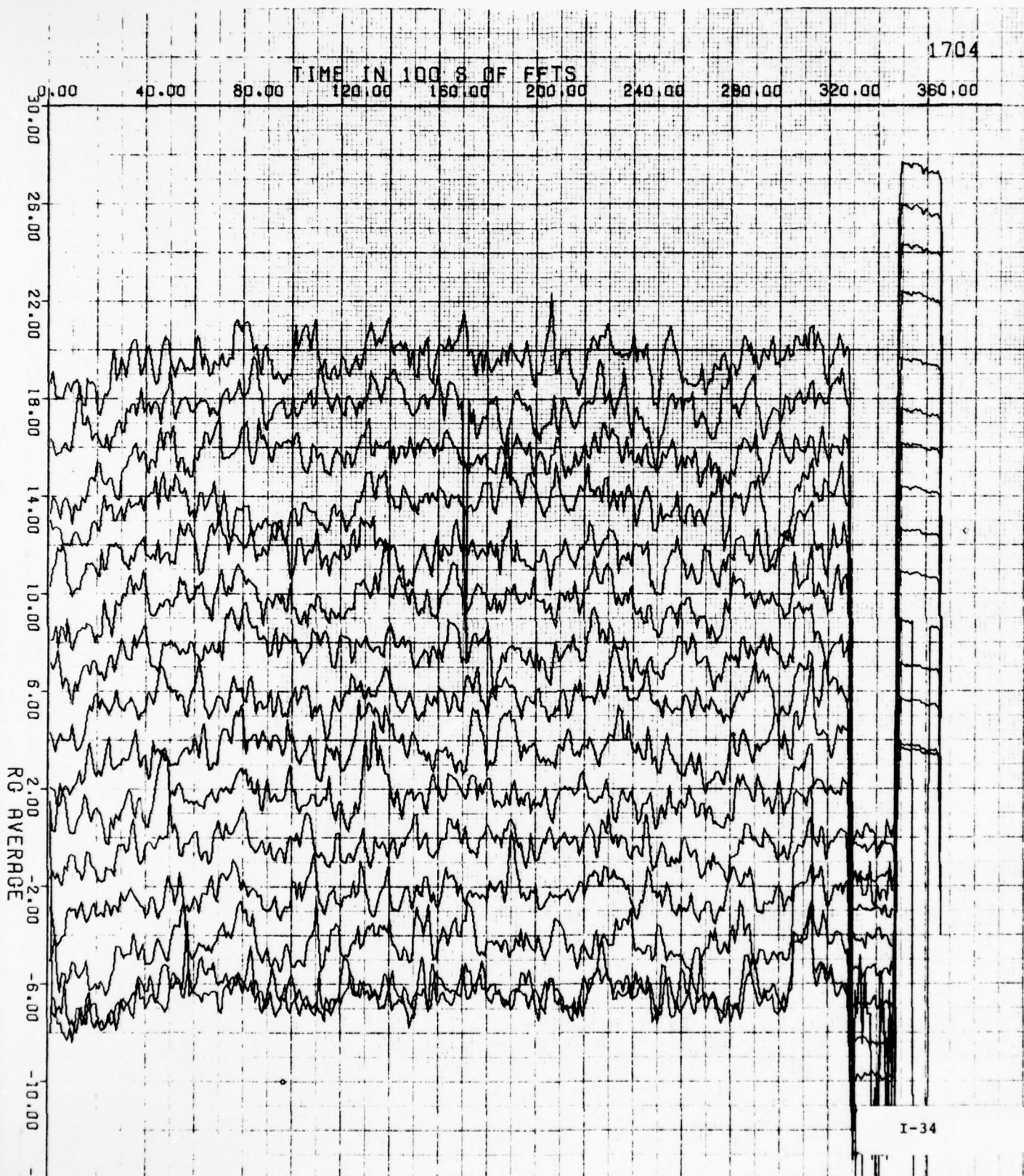


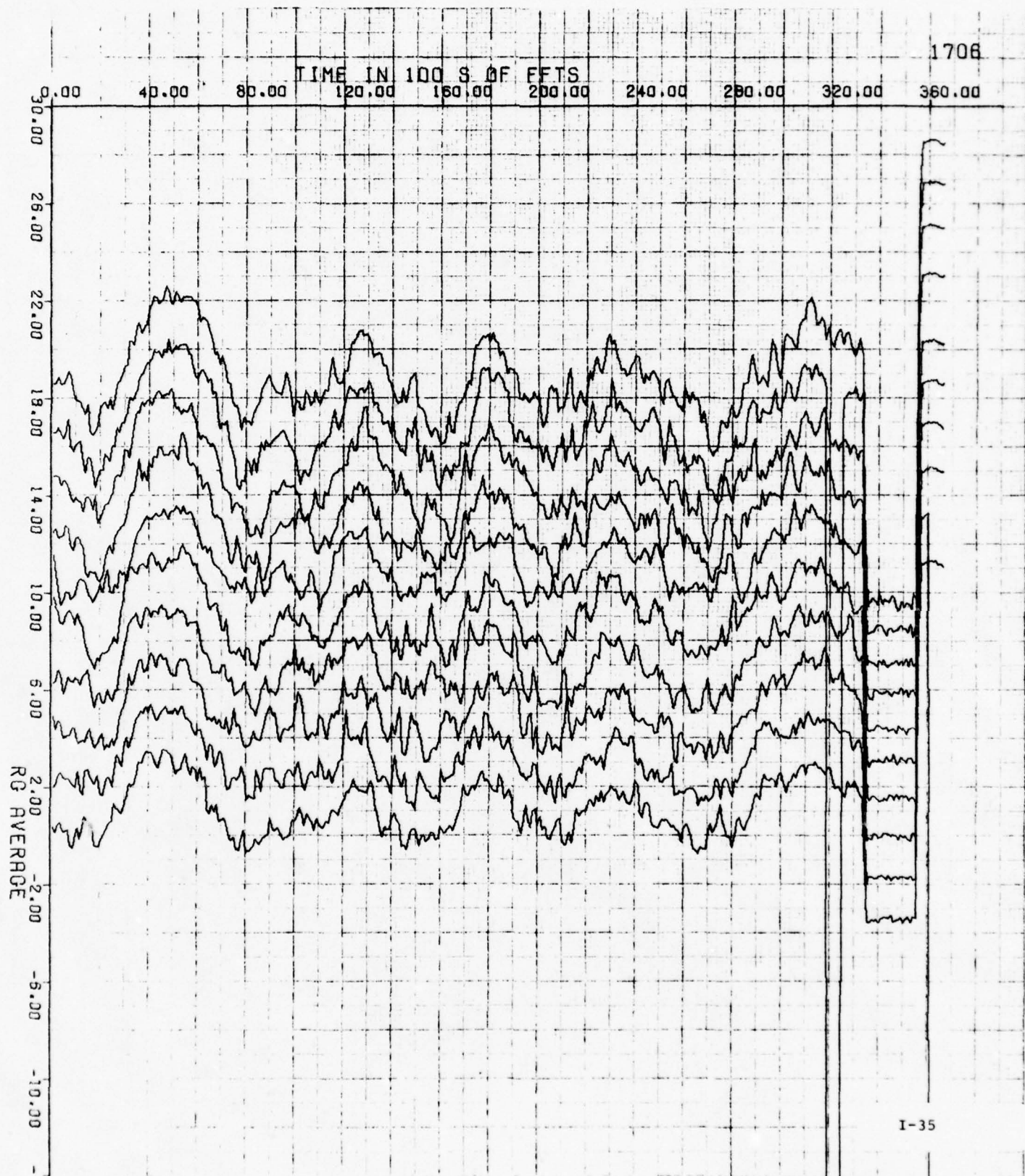
1609

TIME IN 100 S OF FTS

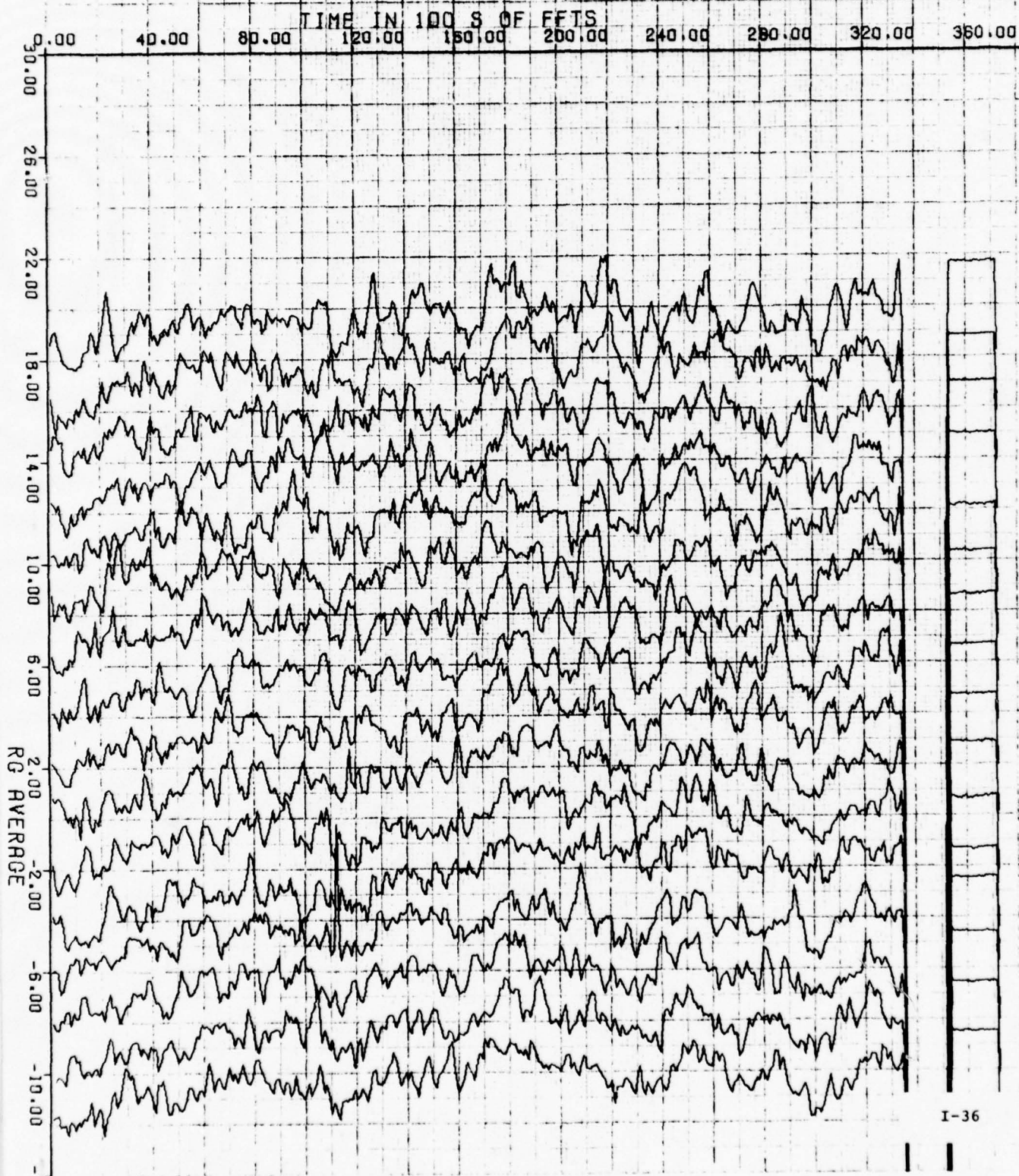


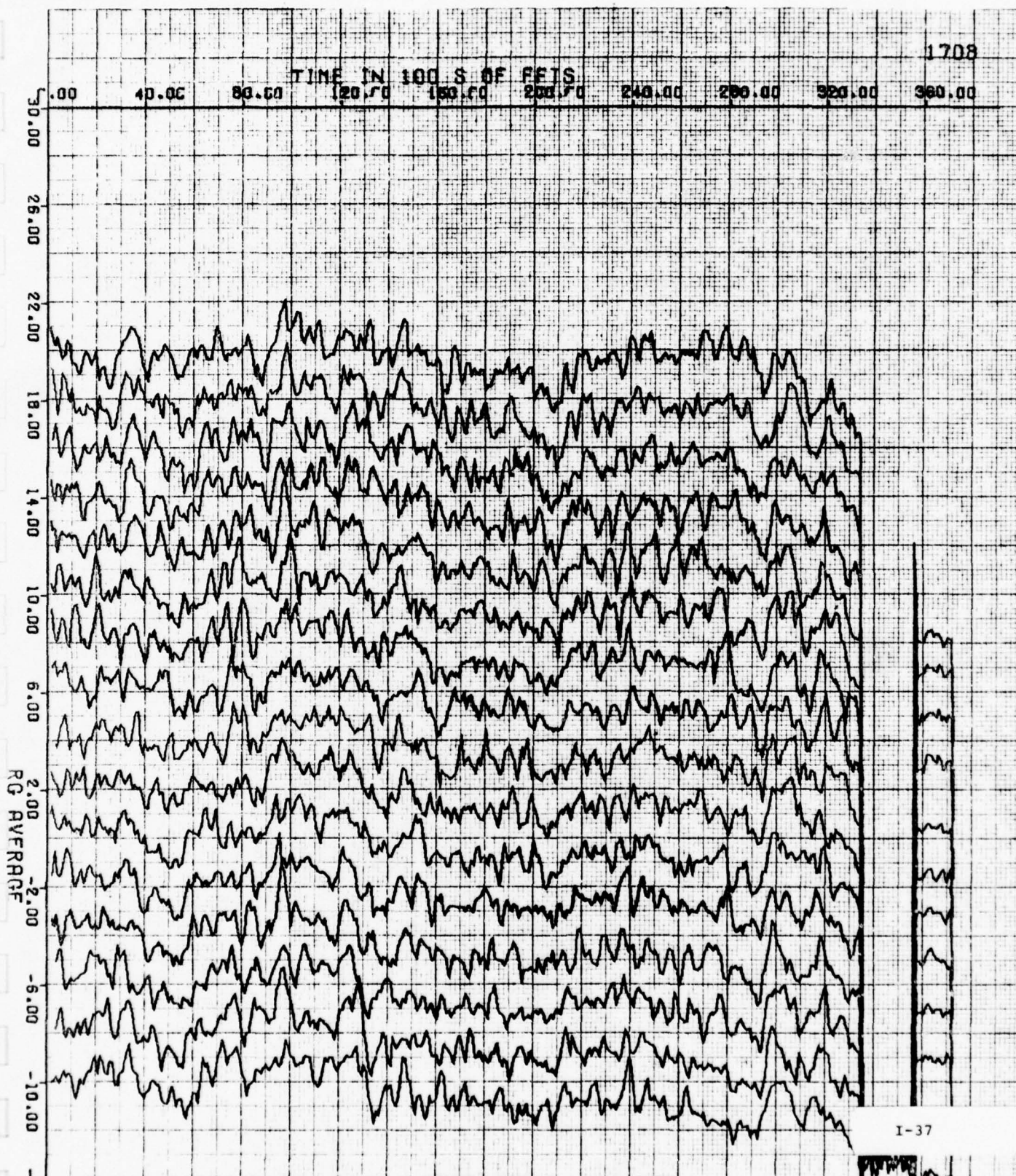
I-33





1707





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1.2 Mean Statistics

A sample mean is generated every 600 FFT frames (1 histogram) in each range gate which yields an effective time aperture of approximately 5.4 seconds. The mean and variance of the set of sample means which consists of approximately 800 points (16 range gates by 50 histograms) are determined and tabulated. This information yields insight into the non-stationarity of the mean. The variance of the sample mean will be higher than the actual variance of the true mean due to residual variations from range gate to range gate which could not be normalized out. The material is organized by run number, mean, mean squared and variance. The entries are in exponential notation.

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STATISTICS OF THE MEAN

RUN	401	403	602	603	604
MEAN	.16508F+02	.14389F+02	.15733F+02	.12381F+02	.17815F+02
MEAN SQUARED	.28793E+03	.22898F+02	.25477F+03	.15826F+02	.32220F+02
VARIANCE	.15414F+02	.21930F+02	.72354E+01	.49723F+01	.48142F+01

RUN	605	606	607	608	609
MEAN	.13901F+02	.17683F+02	.30746E+02	.35144F+02	.23571F+02
MEAN SQUARED	.19830F+02	.32133F+03	.10239E+04	.13737F+04	.60338F+02
VARIANCE	.50654F+01	.86585E+01	.78622E+02	.13866E+03	.51105F+02

RUN	701	702	703	704	705
MEAN	.17299F+02	.11588F+02	.11686E+02	.15818E+02	.14882E+02
MEAN SQUARED	.31377F+02	.14621F+02	.14191E+03	.25816F+03	.24158E+03
VARIANCE	.14532F+02	.11924F+02	.53397E+01	.79394F+01	.20119E+02

RUN	707	708	709	801	802
MEAN	.20133F+02	.13971F+02	.10038E+02	.17671F+02	.15830F+02
MEAN SQUARED	.42024E+03	.19841E+02	.10429E+03	.32113F+03	.20416F+03
VARIANCE	.14888E+02	.32316E+01	.35298E+01	.88844F+01	.12542F+02

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STATISTICS OF THE MEAN

RUN	803	810	812	1104	1105
MEAN	.13503E+02	.13424E+02	.20416E+02	.17448E+02	.13488E+02
MEAN SQUARED	.18696E+03	.18389E+03	.44021E+03	.35151E+03	.25238E+03
VARIANCE	.46383E+01	.36985E+01	.23394E+02	.40048E+02	.12501E+02

RUN	1107	1108	1109	1601	1602
MEAN	.21932E+02	.18771E+02	.16105E+02	.19166E+02	.14306E+02
MEAN SQUARED	.52690E+03	.30122E+03	.31327E+03	.37473E+03	.20790E+03
VARIANCE	.45884E+02	.38877E+02	.53899E+02	.76262E+01	.32475E+01

RUN	1603	1604	1605	1606	1607
MEAN	.17843E+02	.16171E+02	.12073E+02	.16751E+02	.24412E+02
MEAN SQUARED	.33135E+03	.26723E+03	.15610E+03	.36565E+03	.63112E+03
VARIANCE	.12968E+02	.57418E+01	.10335E+02	.14062E+02	.35181E+02

RUN	1609	1704	1708
MEAN	.22031E+02	.15986E+02	.16495E+02
MEAN SQUARED	.53218E+03	.26298E+03	.28401E+03
VARIANCE	.44835E+02	.74393E+01	.11917E+02

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UNCLASSIFIED

APPENDIX J OUTPUTS – SPATIAL AND TEMPORAL ANALYSIS

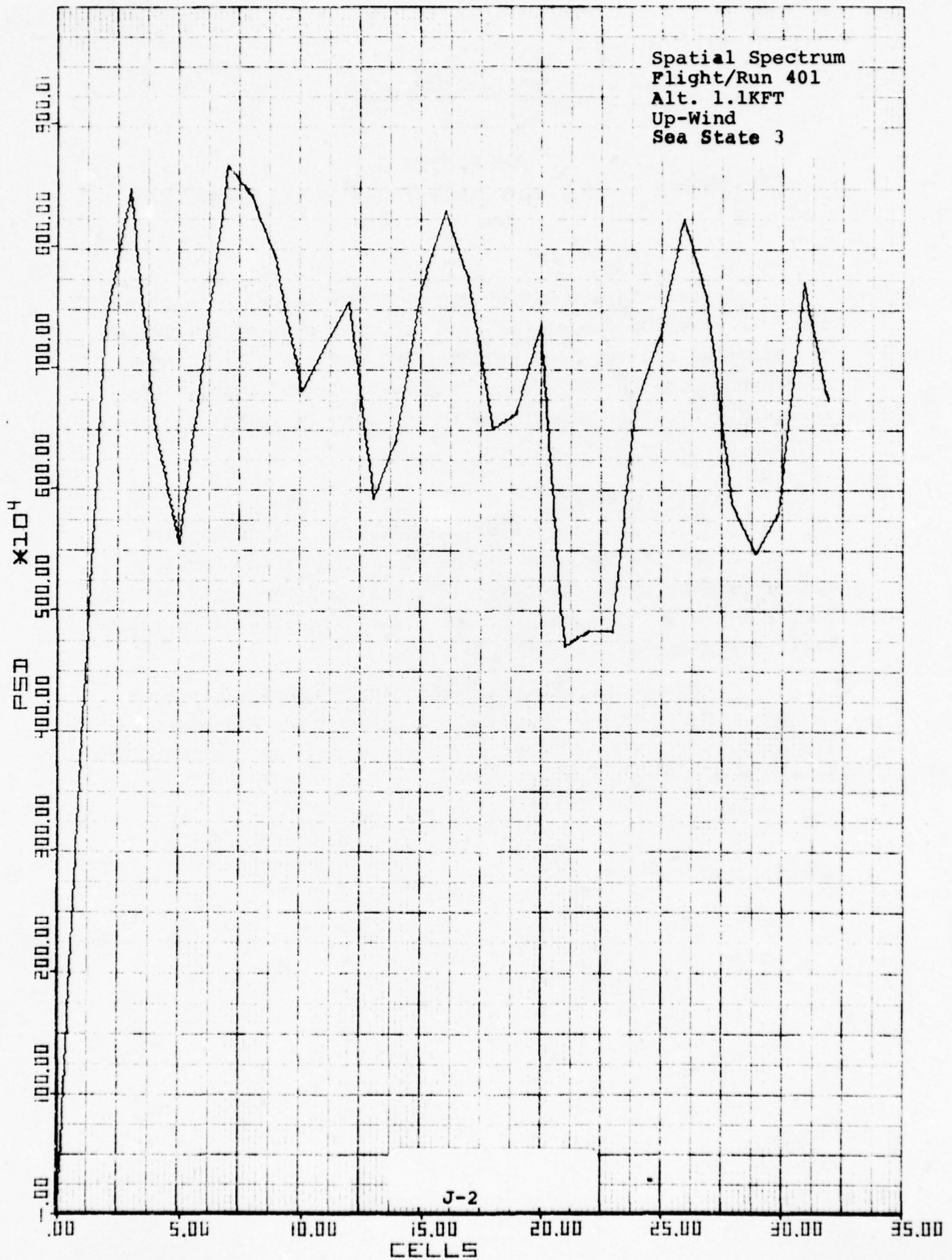
Representative outputs in plot are included in this appendix covering the spatial and temporal characteristics of the observed clutter in both radar and surface coordinates. Each subsection is introduced by a terse explanation of the material. A fuller exposition is included in Volume II, Section 9.

1.1 Spatial Spectra

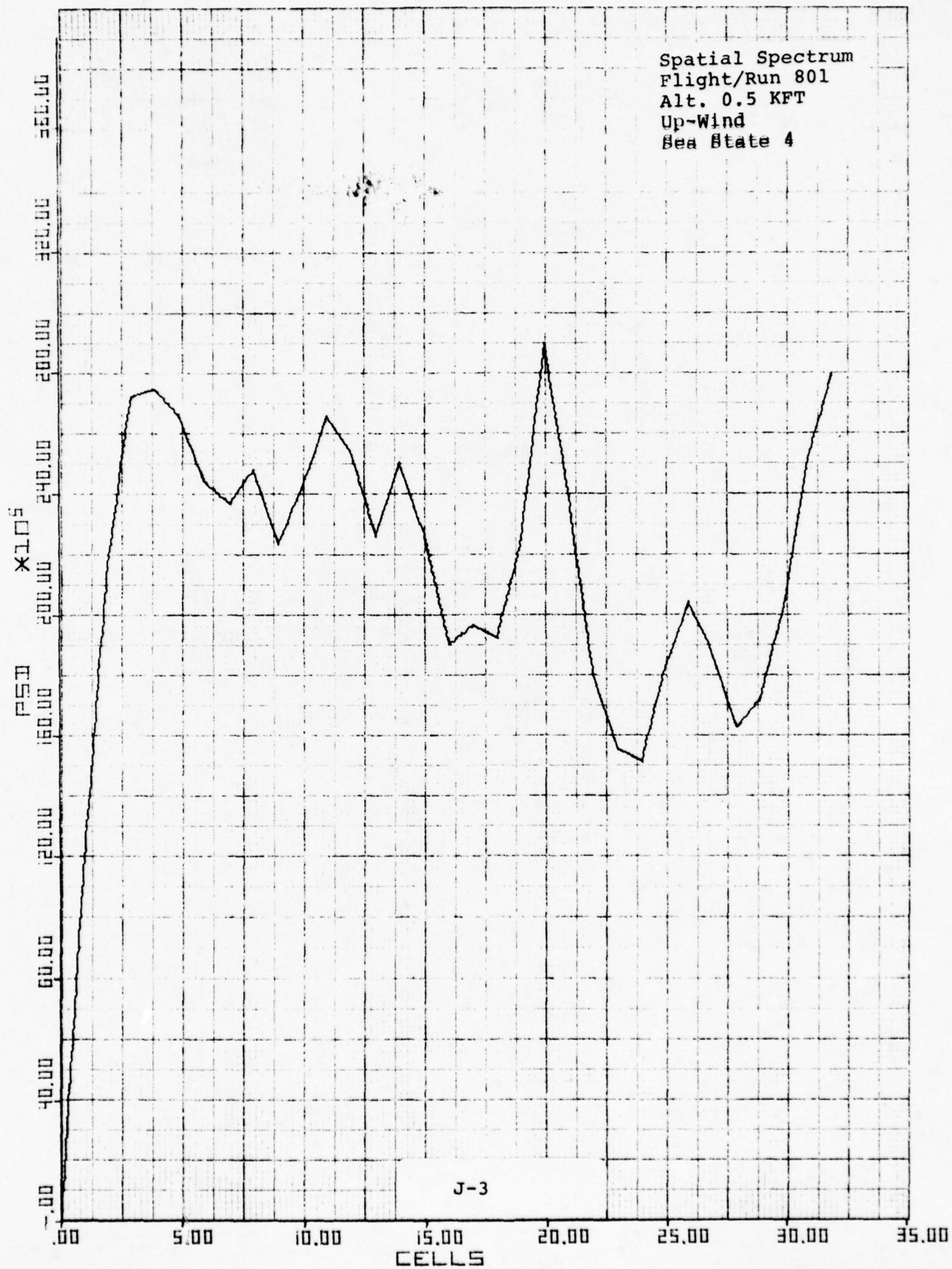
Spatial spectra are calculated from the 32 doppler cells. A spatial spectrum is the magnitude of the fourier transform squared of the power in the 32 doppler cells. Forty such spectra are averaged to remove sampling effects to produce the final spectrum.

If should be noted that the "dc" component has been removed. The abscissa is scaled in cells where each cell is approximately 2.6×10^{-4} cycles/foot wide and the ordinate has units of watts²/cycle/foot.

Spatial Spectrum
Flight/Run 401
Alt. 1.1KFT
Up-Wind
Sea State 3

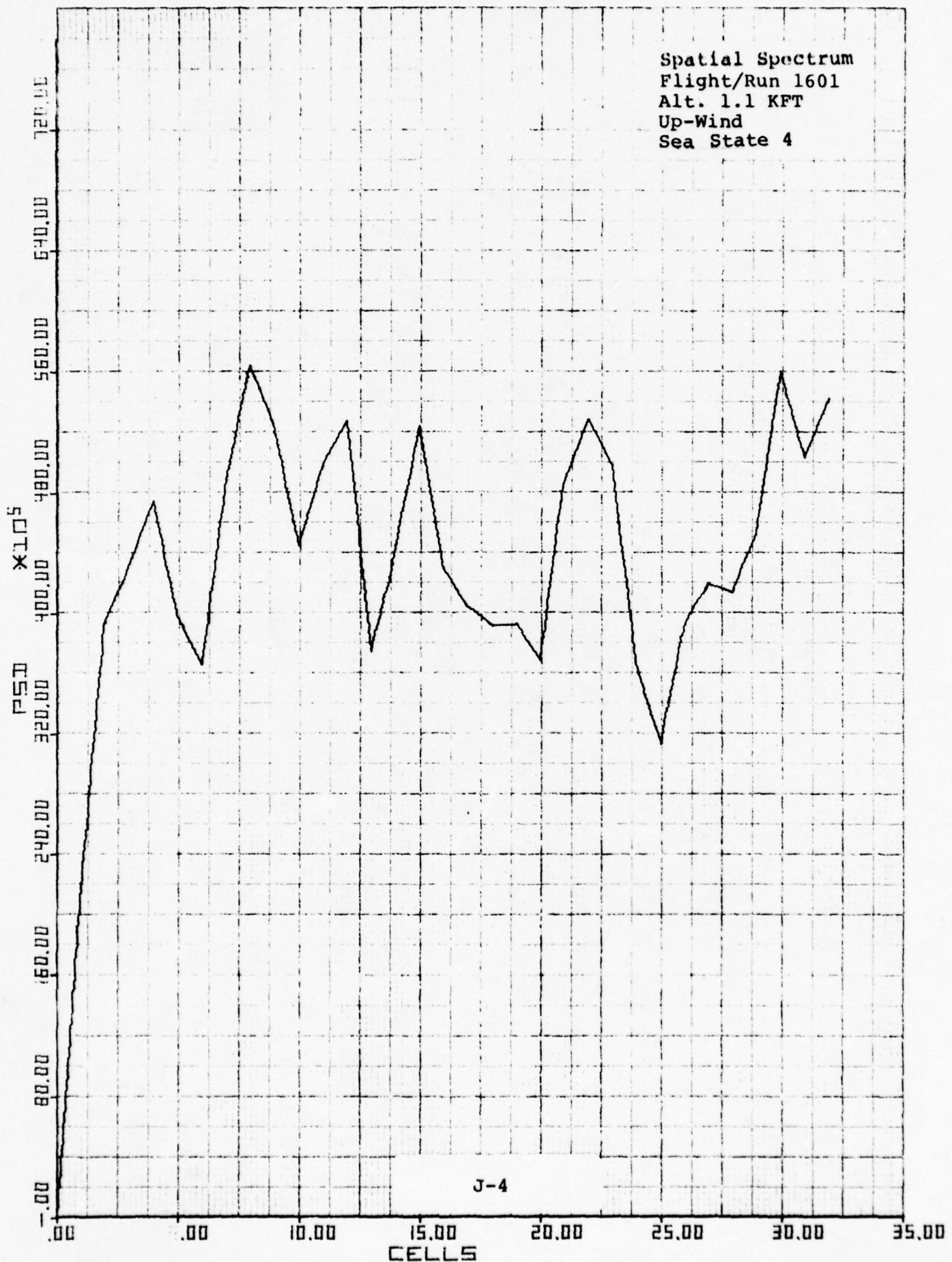


Spatial Spectrum
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4



J-3

Spatial Spectrum
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4



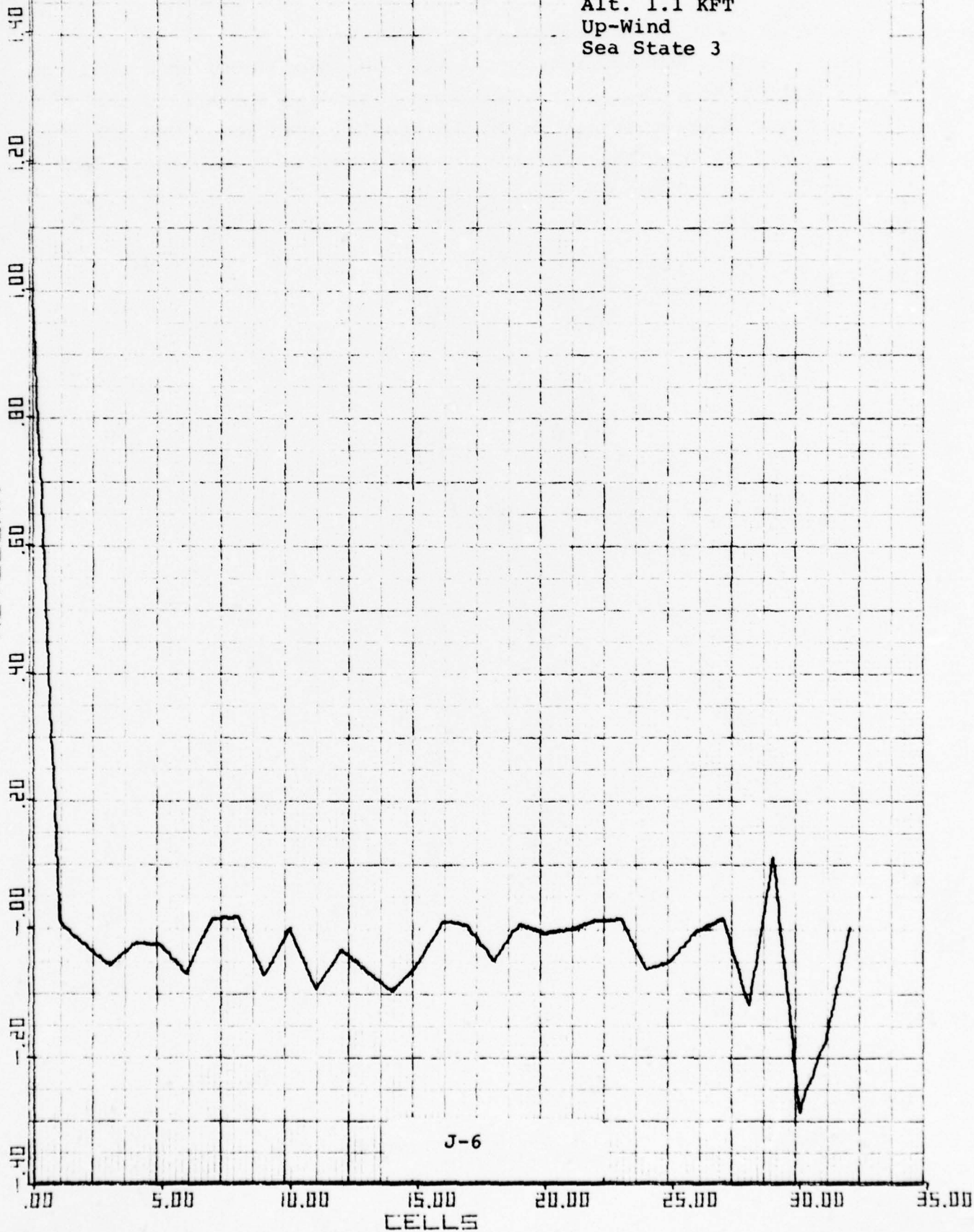
UNCLASSIFIED

1.2 Spatial Autocorrelation Function

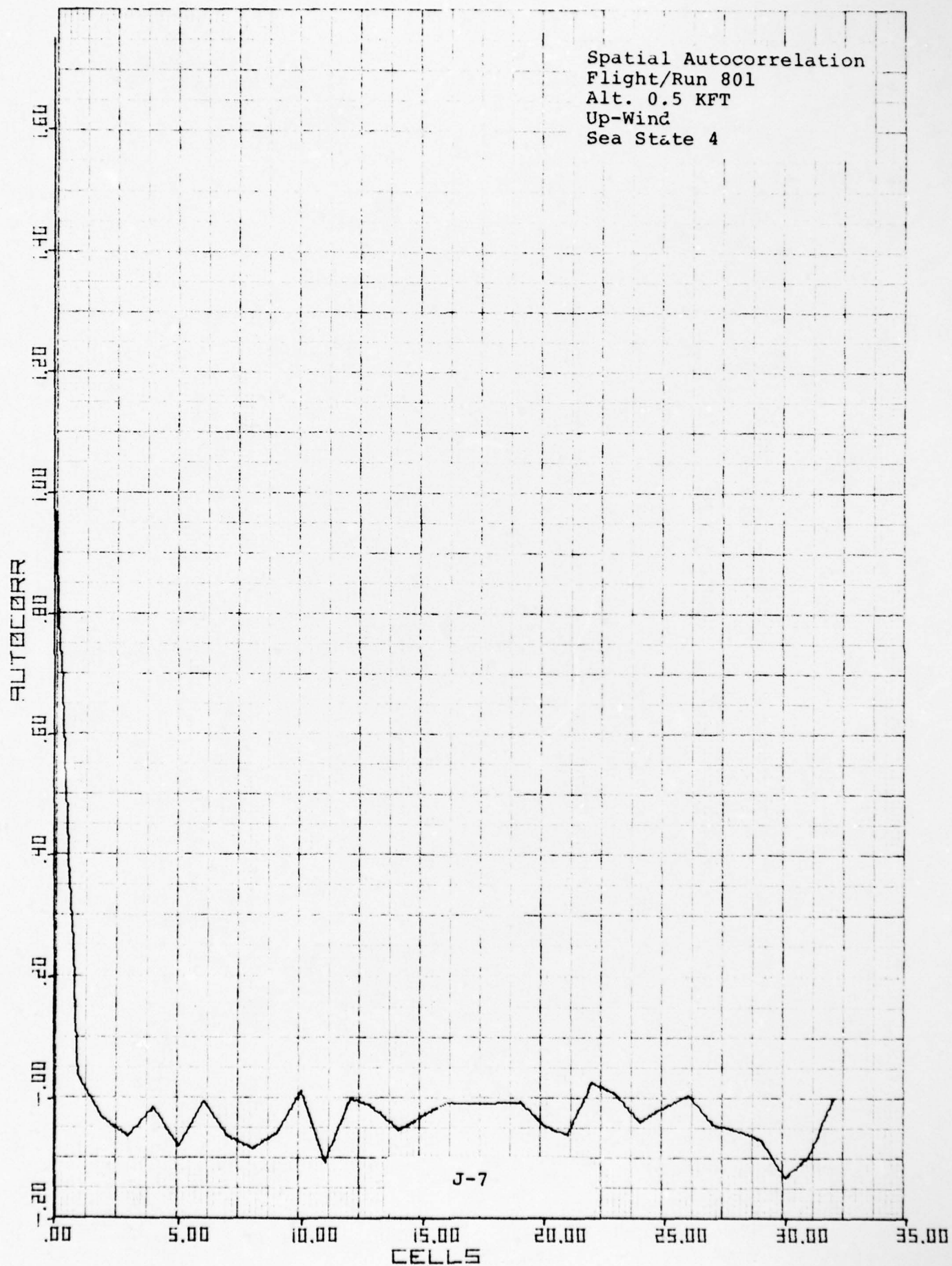
The spatial autocorrelation function (ACF) is calculated directly from the spatial spectrum; that is, the ACF is the inverse fourier transform of the spatial spectrum. The ACF is derived from the spectrum in the previous subsection. Each cell is approximately 60 feet wide.

Spatial Autocorrelation
Flight/Run 401
Alt. 1.1 KFT
Up-Wind
Sea State 3

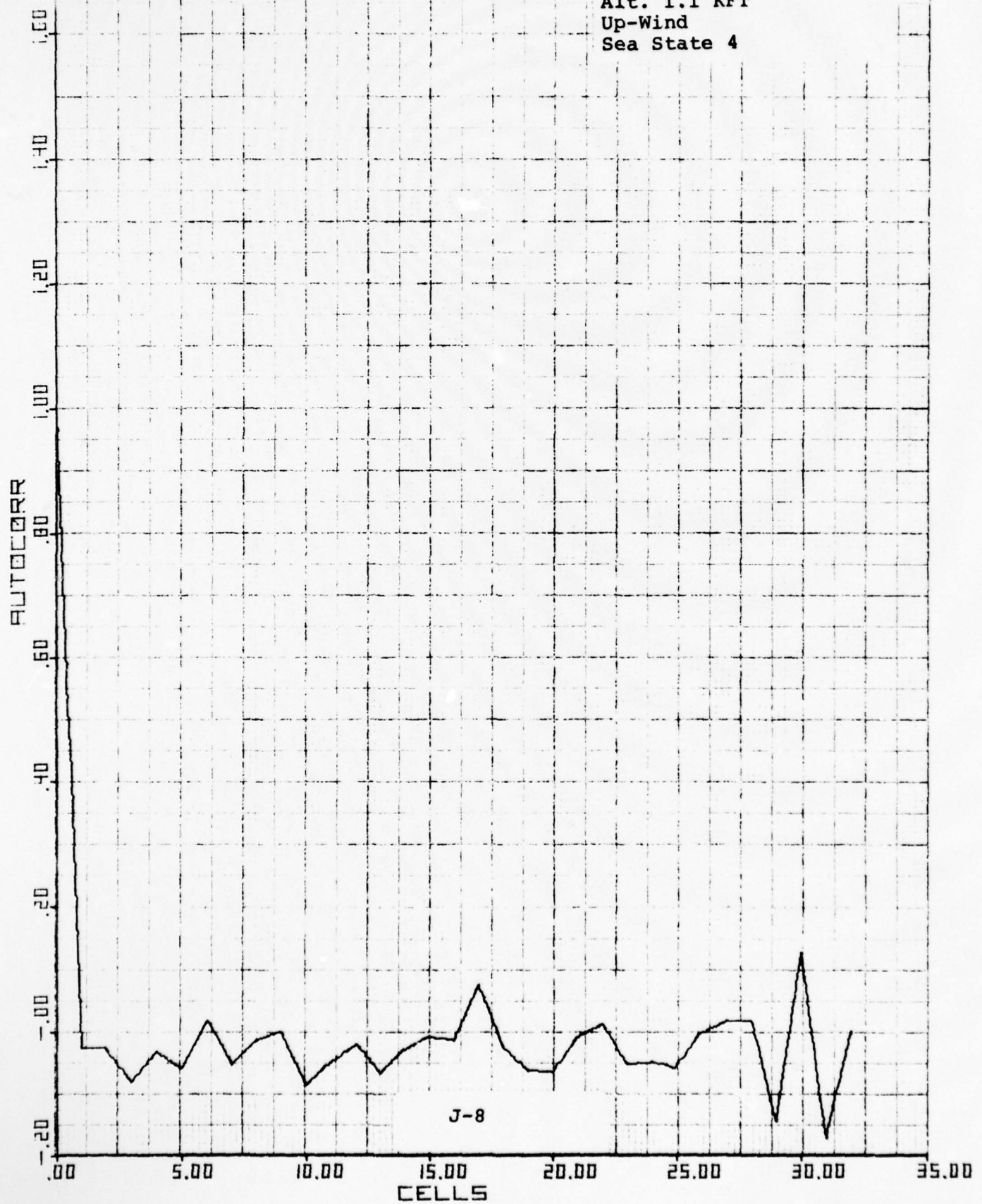
AUTOCORR



Spatial Autocorrelation
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4



Spatial Autocorrelation
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4



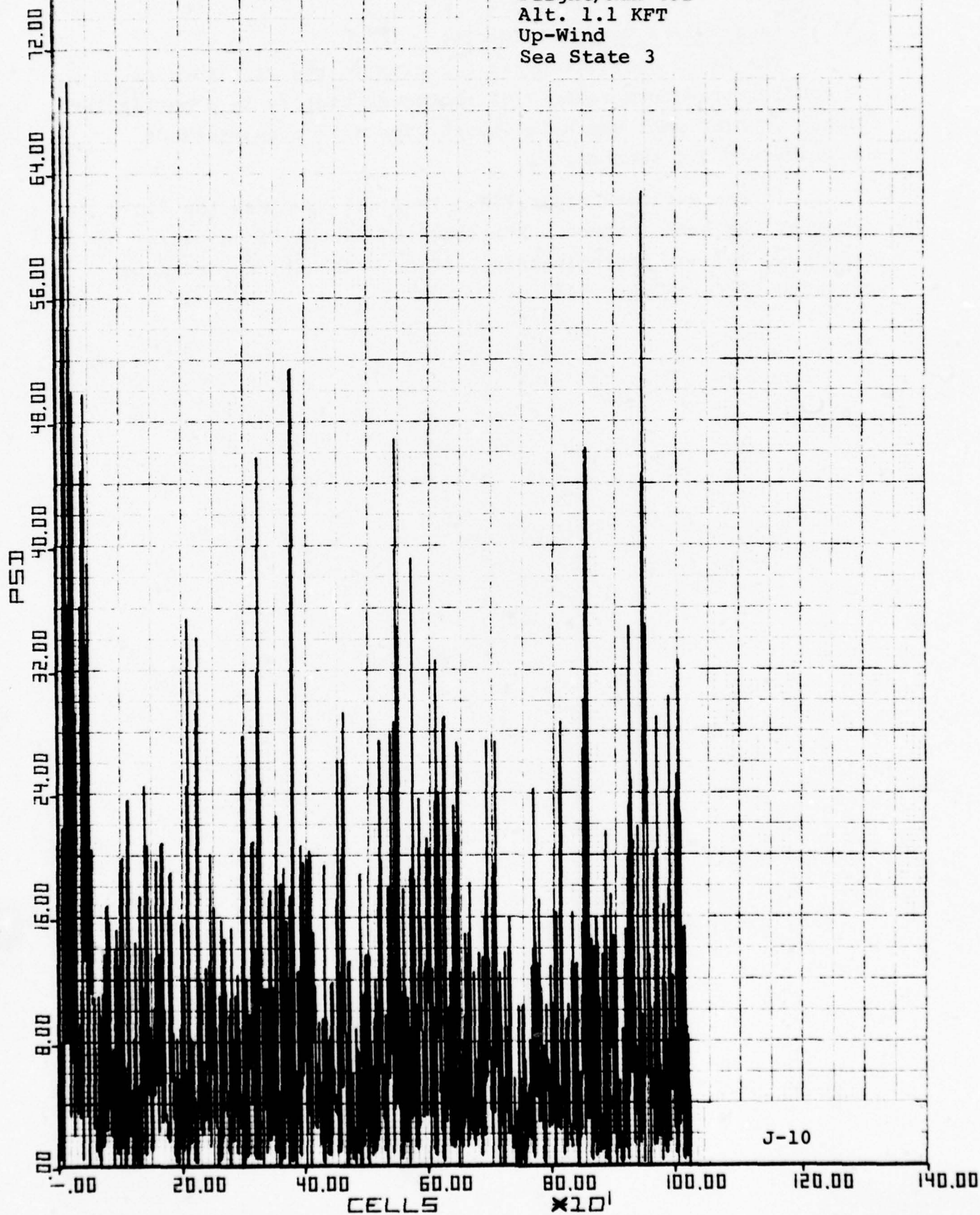
UNCLASSIFIED

1.3 Radar Fixed Temporal Spectra

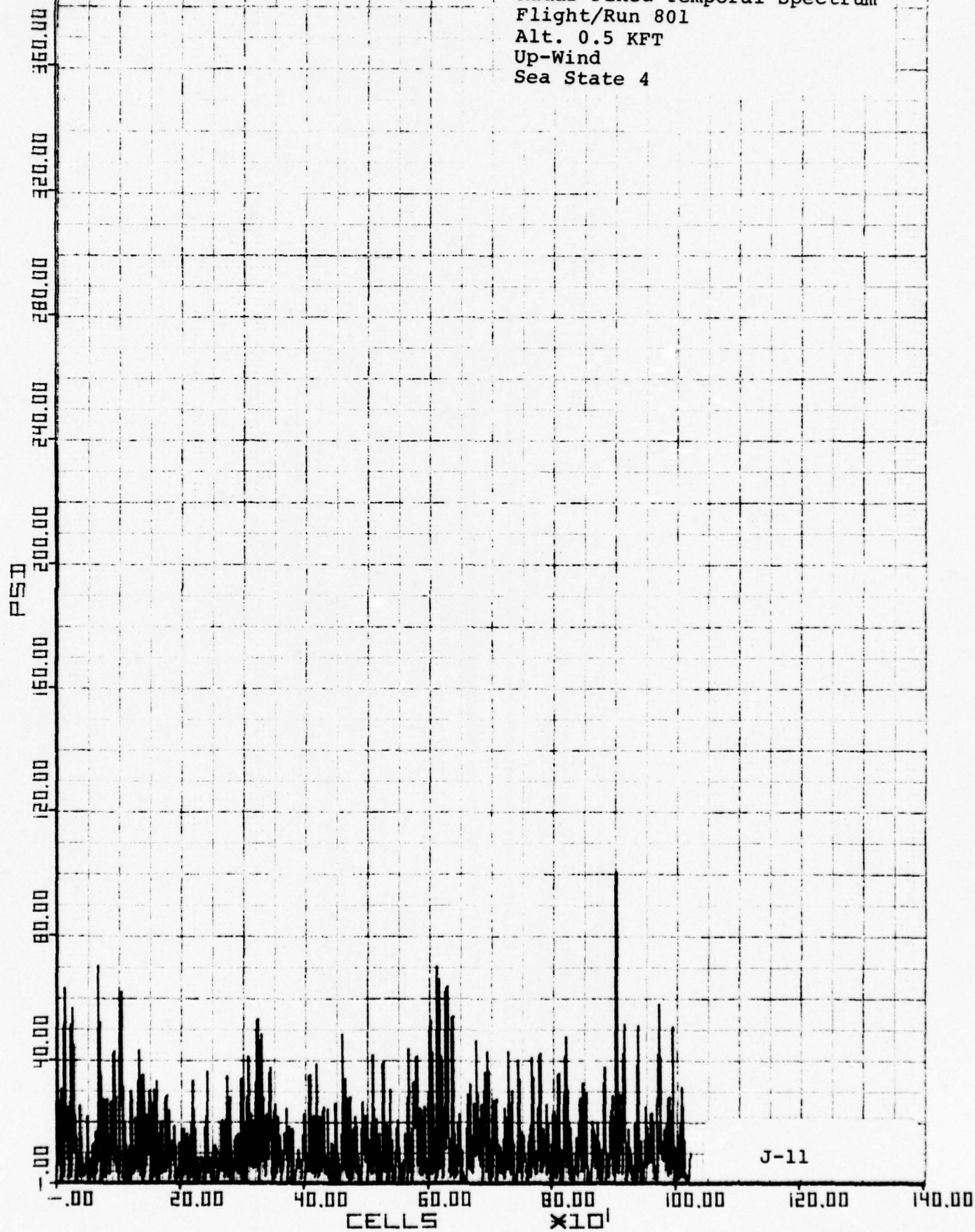
The Radar Fixed Temporal Spectrum is the magnitude of the fourier transform squared of the power history in a particular (fixed) doppler cell which is viewed over a time aperture of approximately 9.1 seconds.

In the enclosed Radar Fixed Temporal Spectrum the "dc" component has been removed. The abscissa is scaled in cells where each cell is approximately .055 Hz wide and the ordinate has units of watts²/Hz.

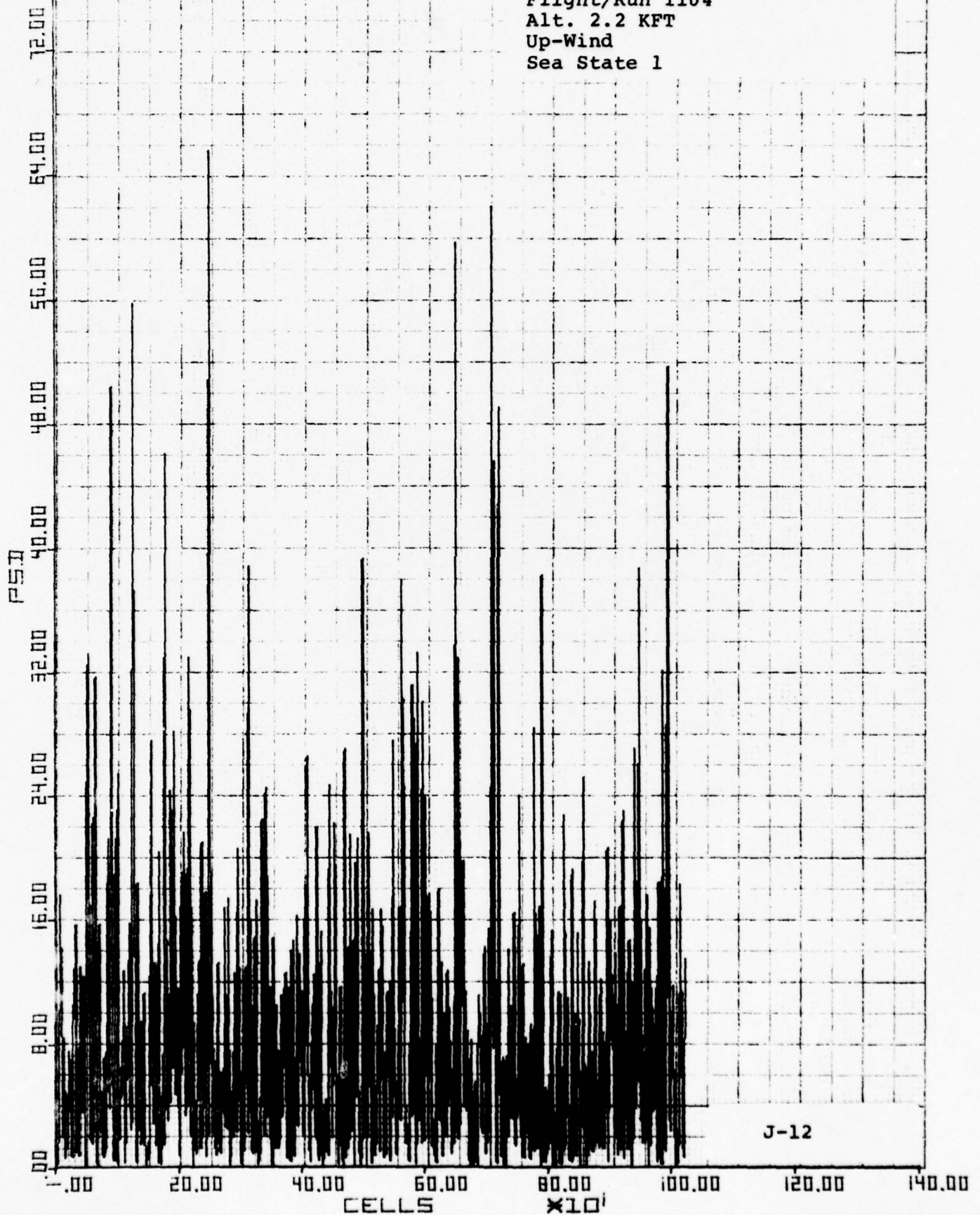
Radar Fixed Temporal Spectrum
Flight/Run 401
Alt. 1.1 KFT
Up-Wind
Sea State 3



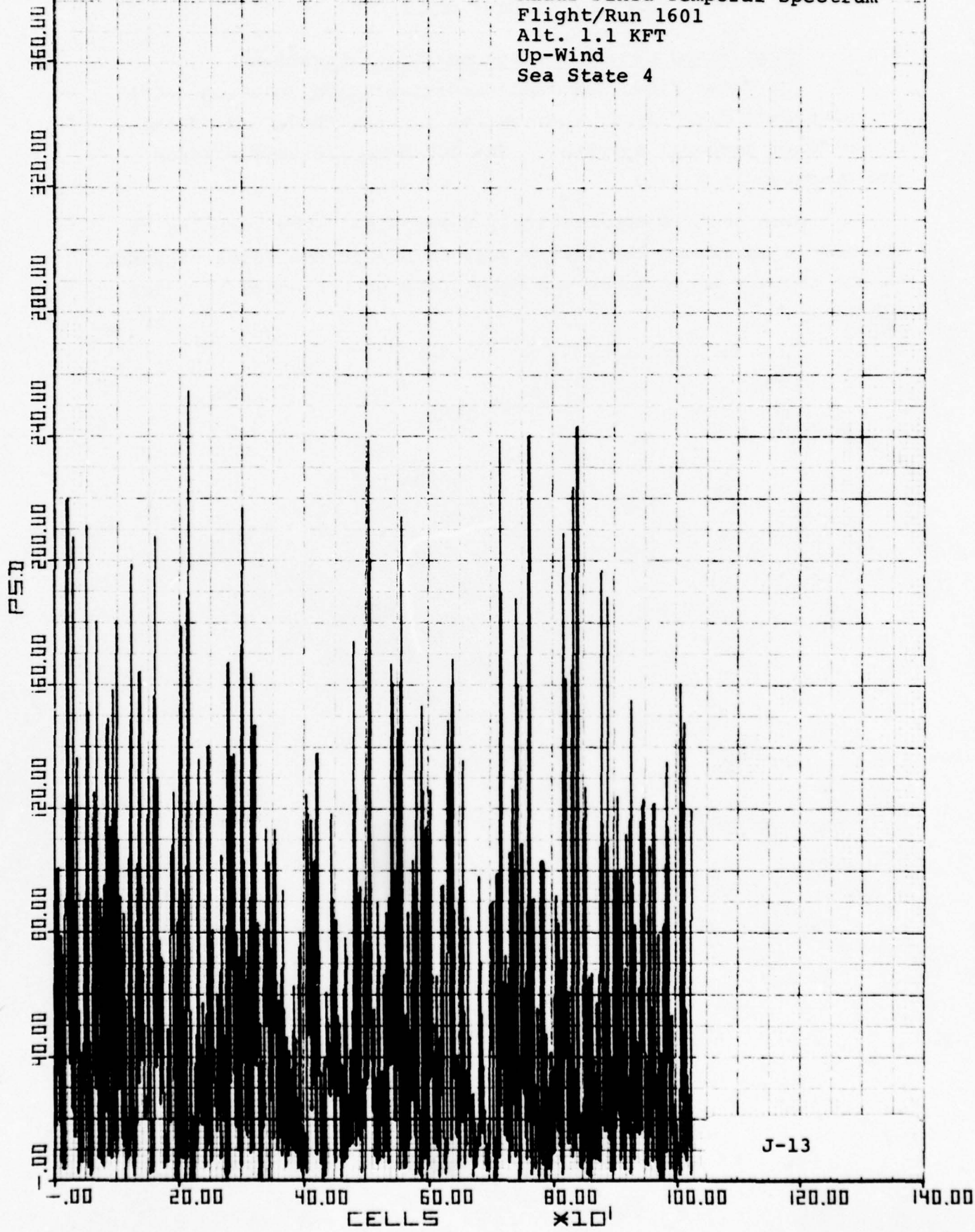
Radar Fixed Temporal Spectrum
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4



Radar Fixed Temporal Spectrum
Flight/Run 1104
Alt. 2.2 KFT
Up-Wind
Sea State 1



Radar Fixed Temporal Spectrum
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4



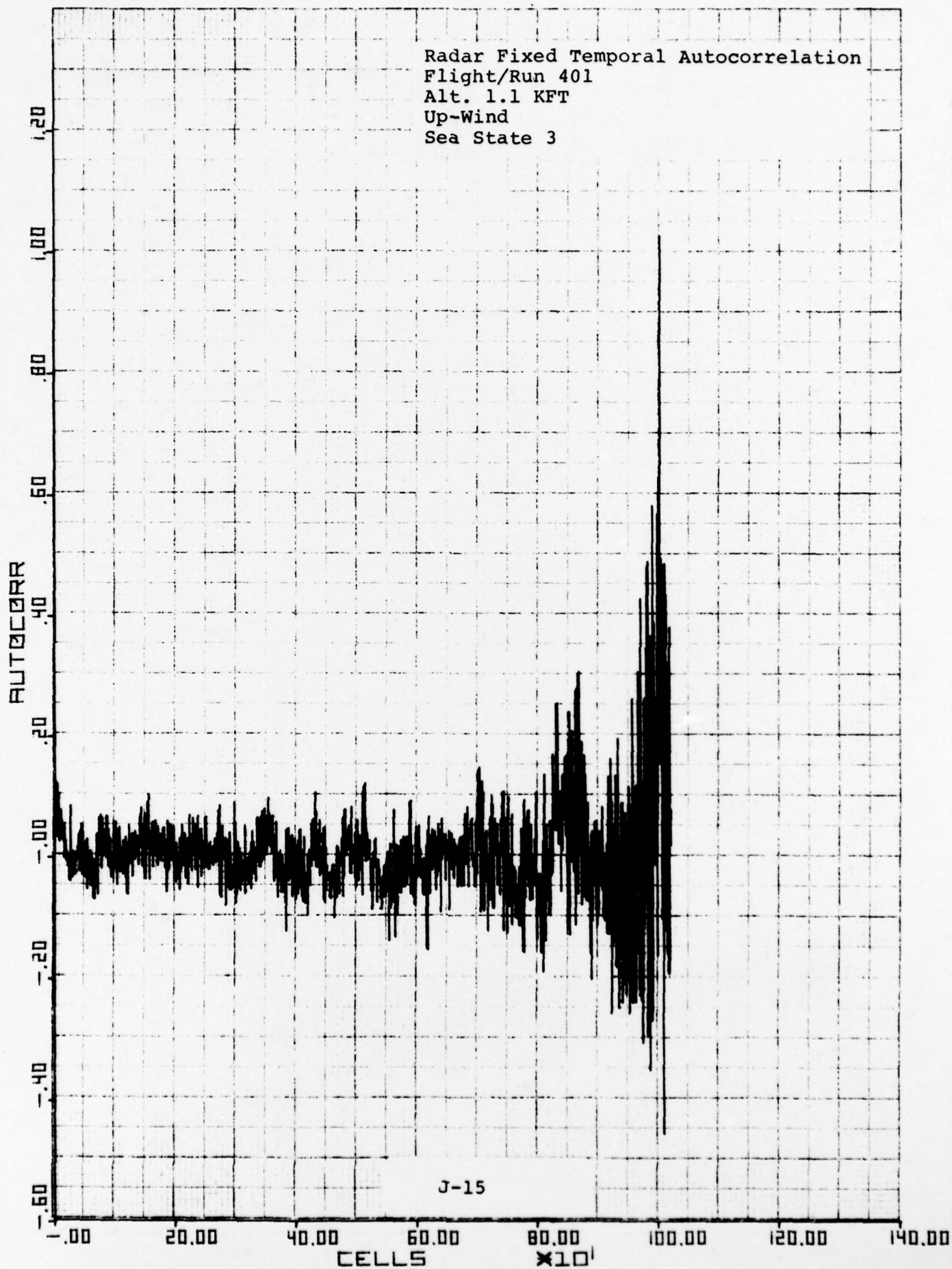
UNCLASSIFIED

1.4 Radar Fixed Temporal Autocorrelation Function

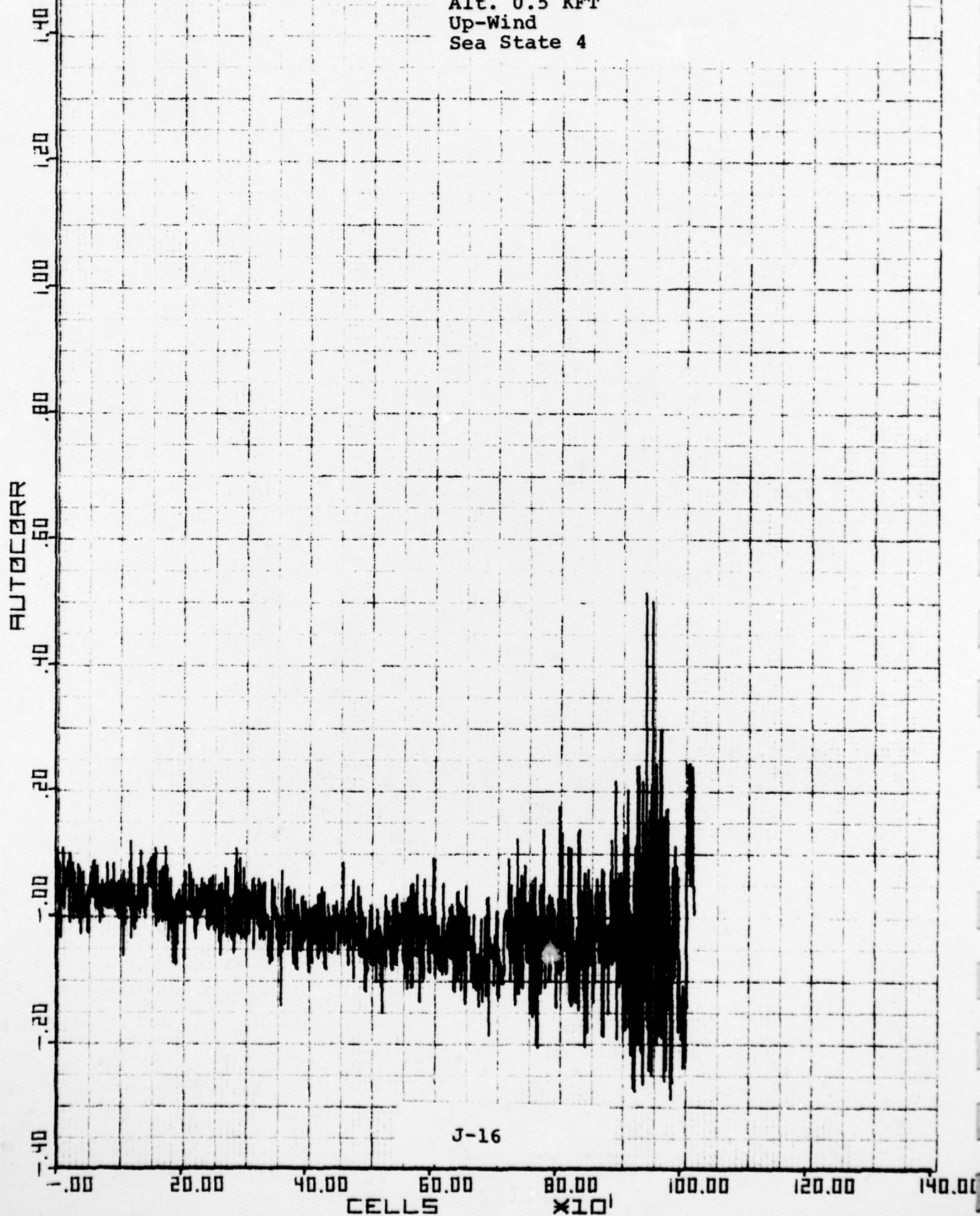
The Radar Fixed Temporal Autocorrelation Function (ACF) is calculated directly as the inverse fourier transform of the radar fixed temporal spectru,. The ACF here are derived from the spectrum in A 10.3.

Each cell is approximately 8.9ms wide. The increase in the ACF in an around the 1000th cell is due to the noise variance on the process since fewer and fewer samples are added into the ACF.

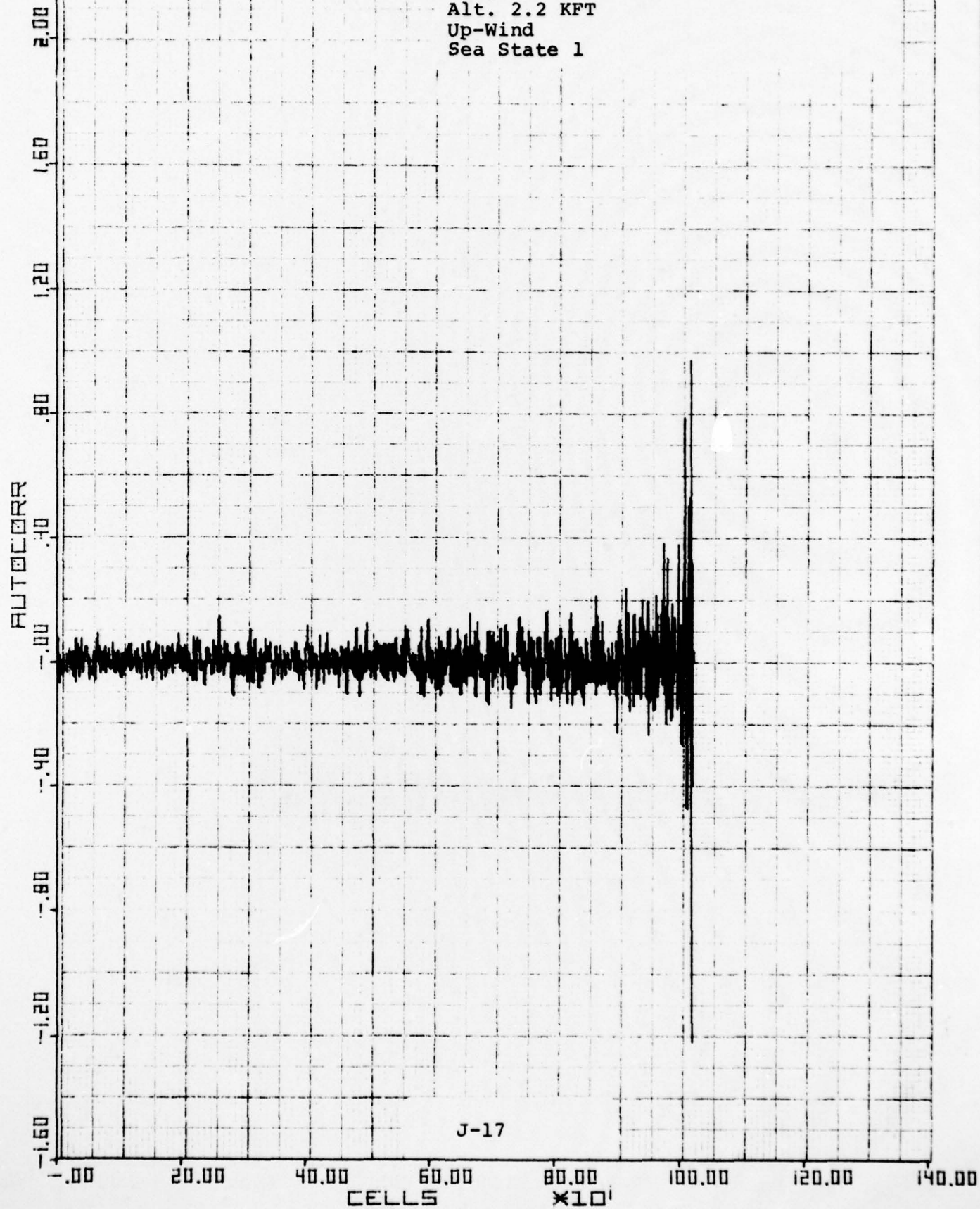
Radar Fixed Temporal Autocorrelation
Flight/Run 401
Alt. 1.1 KFT
Up-Wind
Sea State 3



Radar Fixed Temporal Autocorrelation
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4

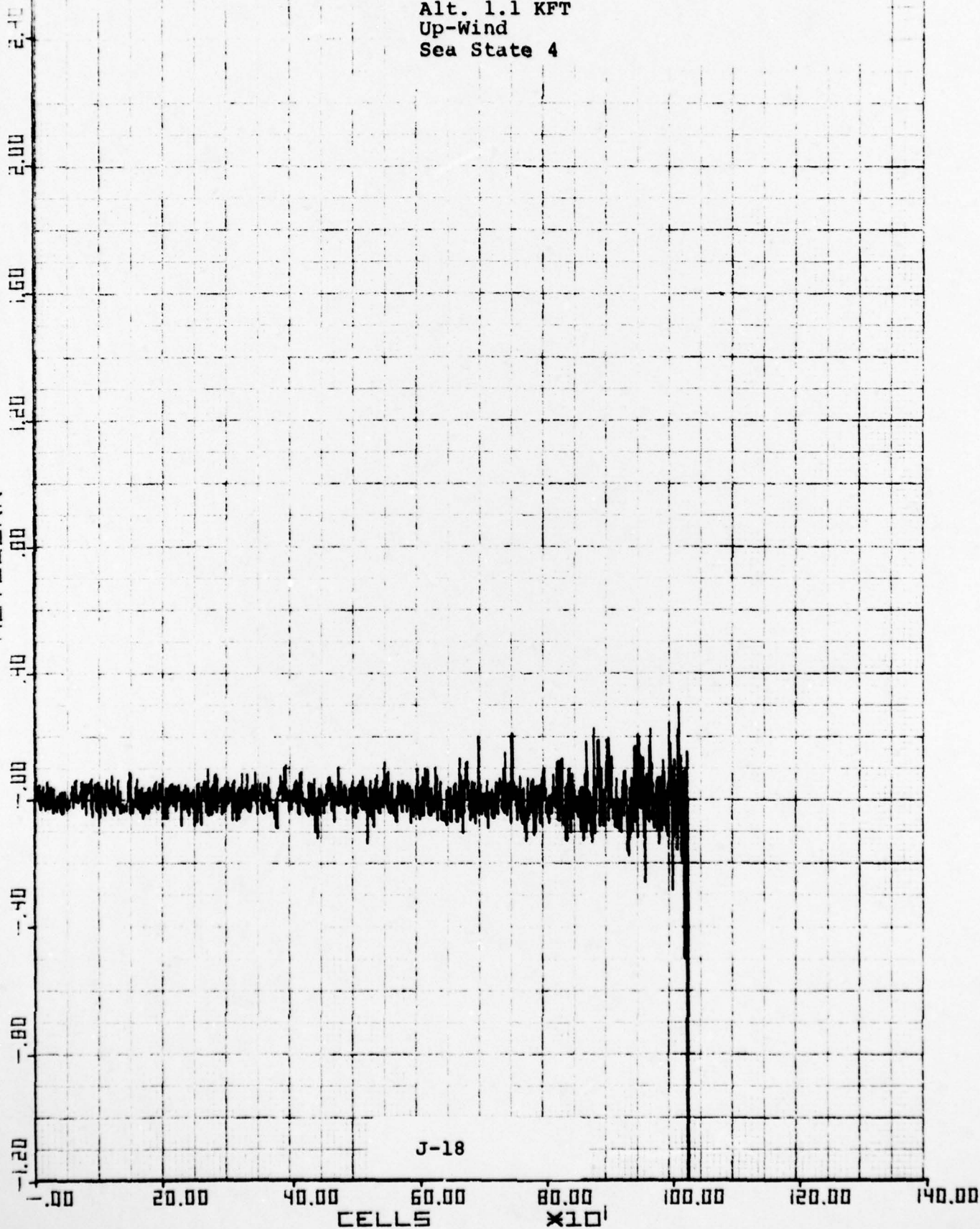


Radar Fixed Temporal Autocorrelation
Flight/Run 1104
Alt. 2.2 KFT
Up-Wind
Sea State 1



Radar Fixed Temporal Autocorrelation
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4

AUTOCORR



UNCLASSIFIED

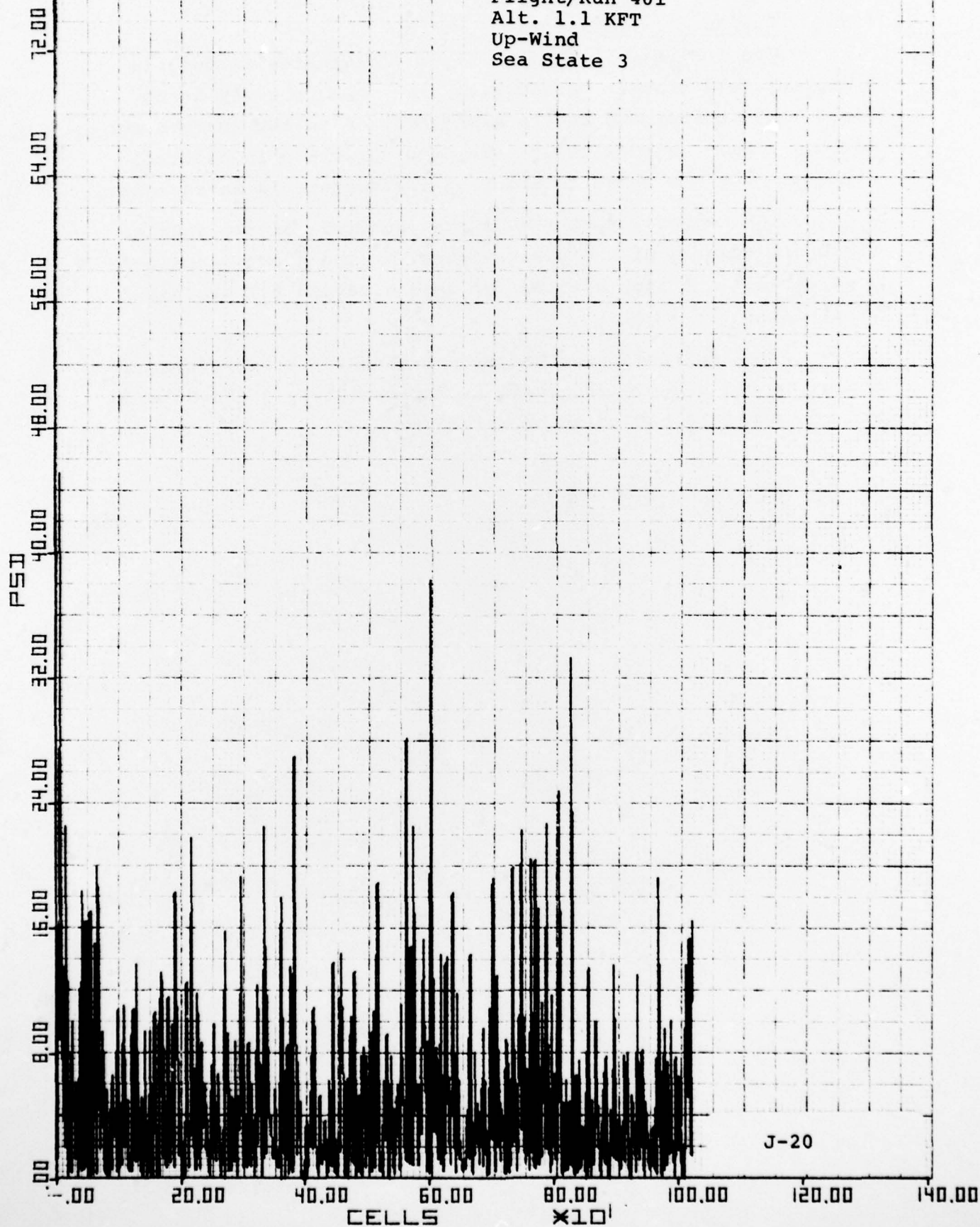
1.5 Surface Fixed Temporal Spectra

The analysis in surface fixed coordinates is done in a doppler cell that is varied with time in such a way as to force it to correspond to the same location on the surface for as long a time as possible. Here, the variation in clutter with time for the space location on the surface is investigated.

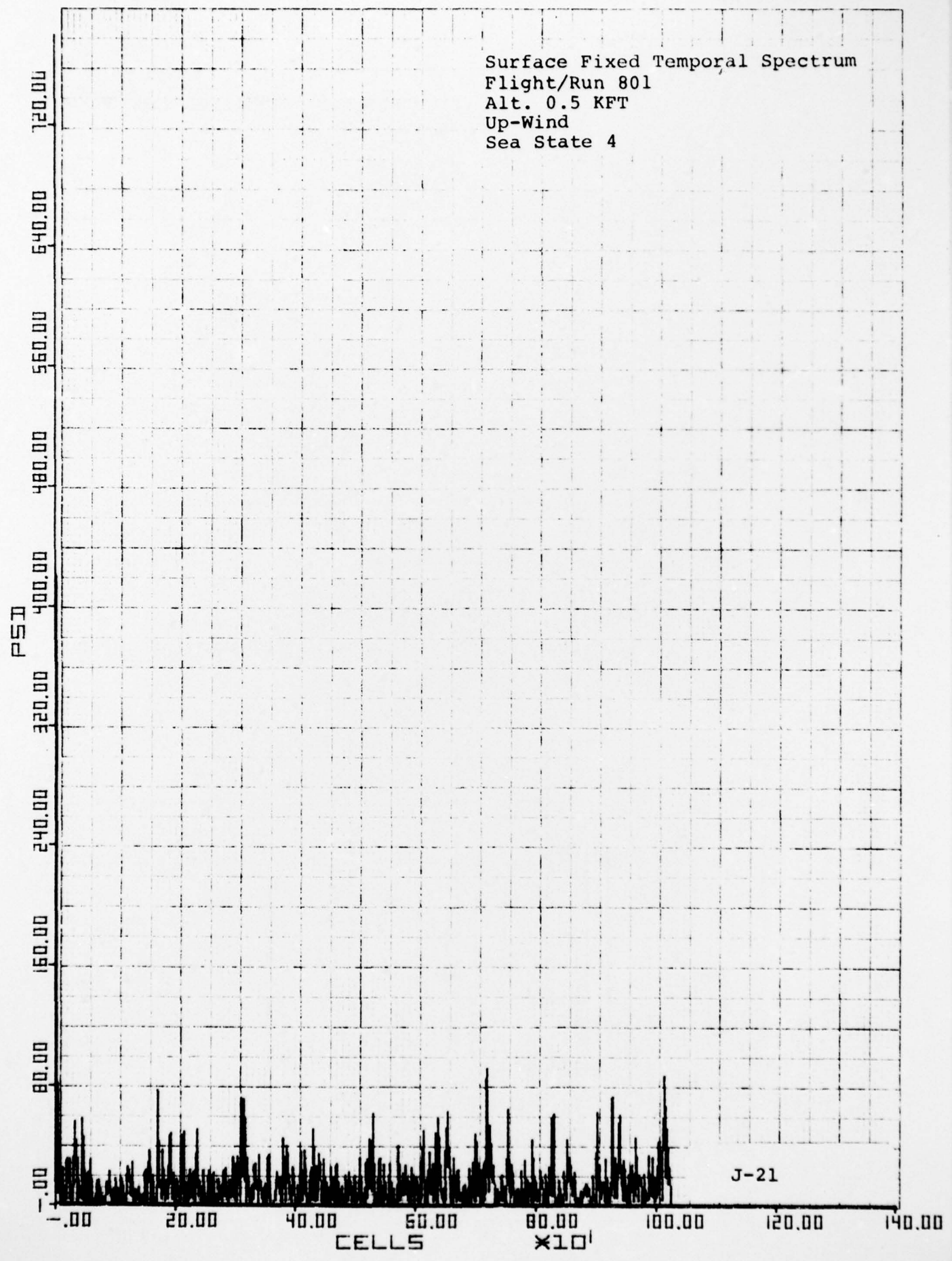
The temporal spectrum is the magnitude of the fourier transform squared of the power history in the above described doppler cell. A time aperture of approximately 9.1 seconds is used.

The "dc" component has been removed. The abscissa is scaled in cells where each cell is approximately 0.055 Hz wide and the ordinate has units of watts²/Hz.

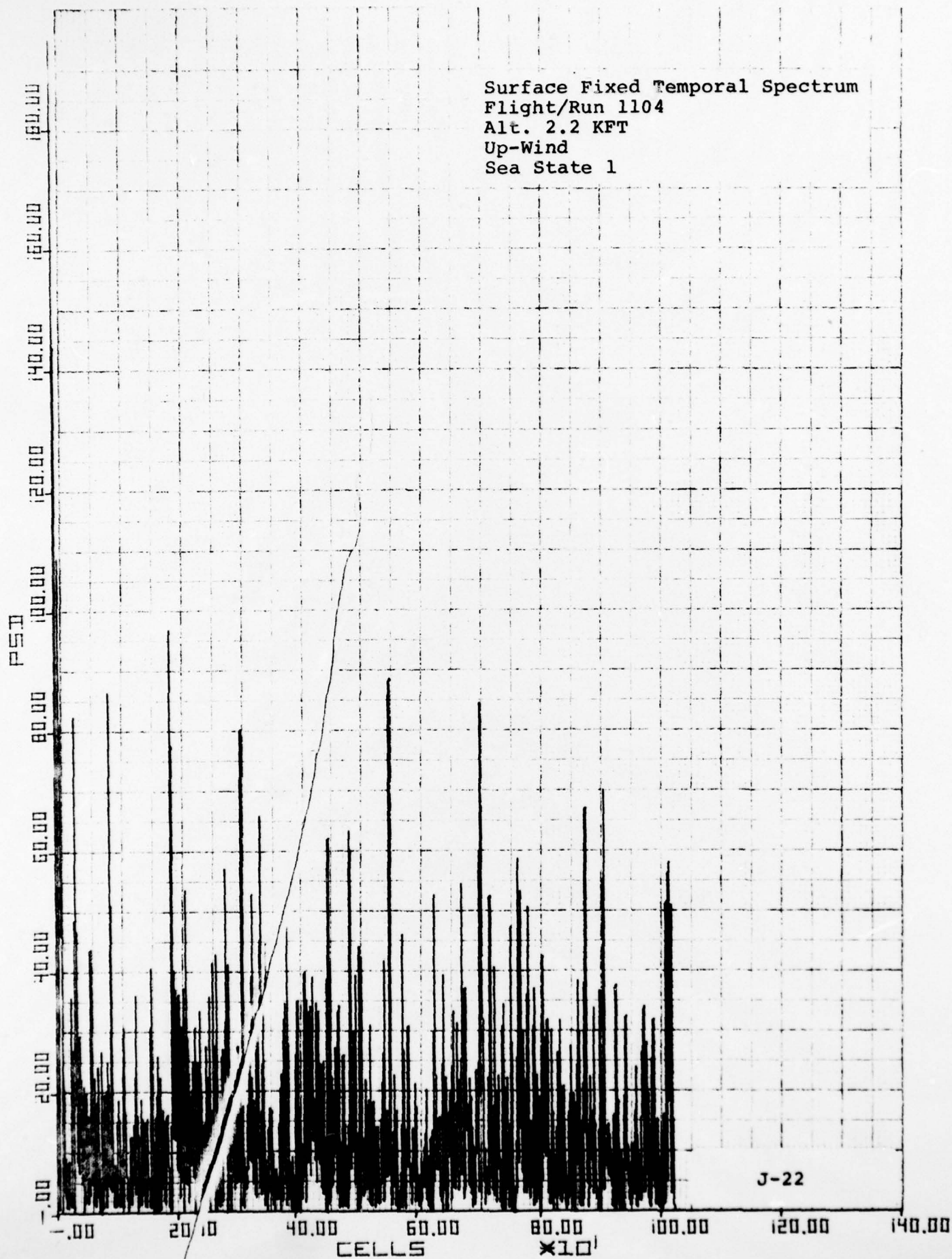
Surface Fixed Temporal Spectrum
Flight/Run 401
Alt. 1.1 KFT
Up-Wind
Sea State 3



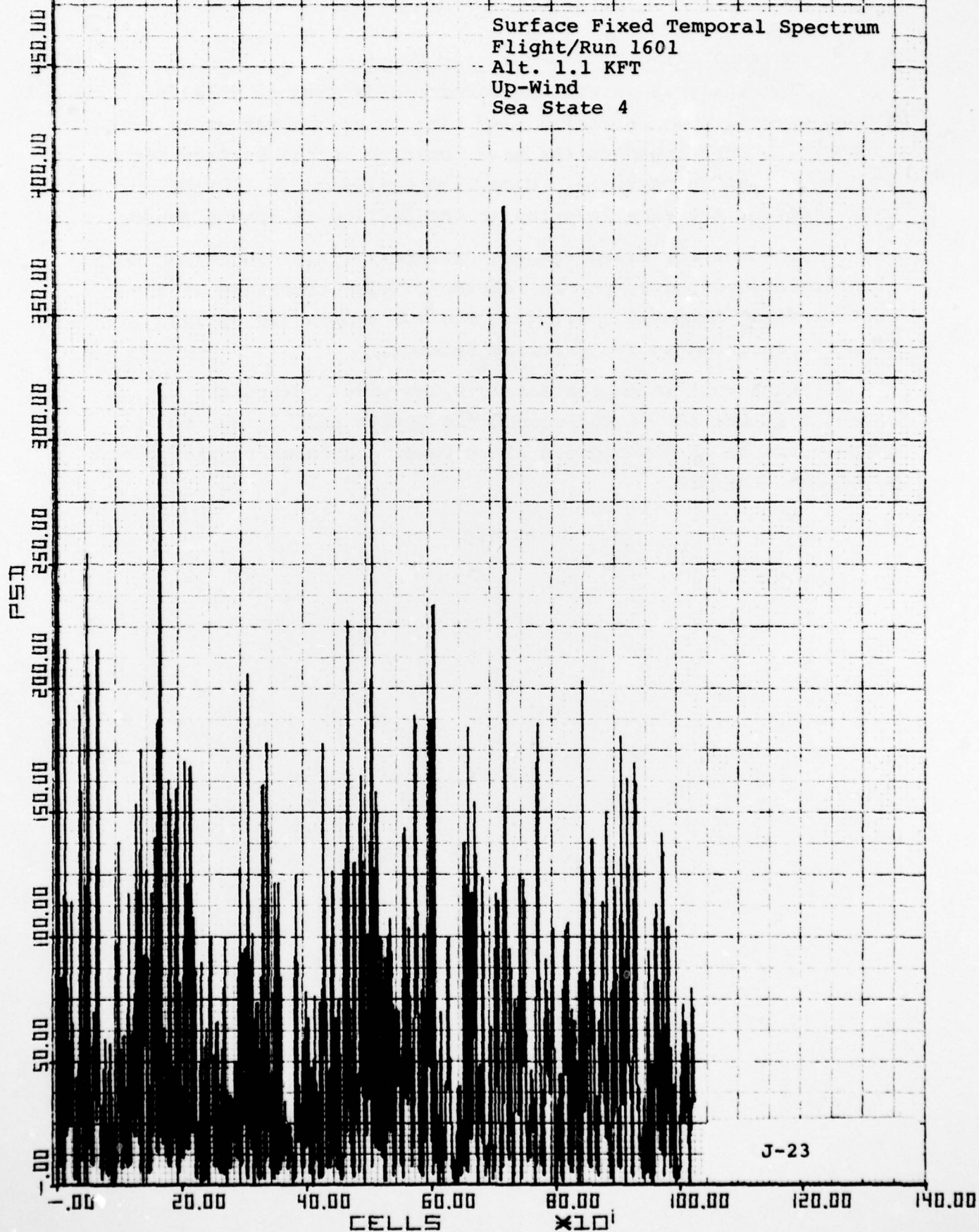
Surface Fixed Temporal Spectrum
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4



Surface Fixed Temporal Spectrum
Flight/Run 1104
Alt. 2.2 KFT
Up-Wind
Sea State 1



Surface Fixed Temporal Spectrum
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4



UNCLASSIFIED

1.6 Surface Fixed Autocorrelation Function

The analysis in surface fixed coordinates is done in a doppler cell that is varied with time in such a way as to force it to correspond to the same location in the surface for as long a time as possible. Here, the variation in clutter with time for the same location in the surface is investigated.

The surface fixed temporal autocorrelation function (ACF) is calculated directly as the inverse fourier transform of the surface fixed temporal spectrum. The ACF's here are derived from the spectrum in the previous section.

Each cell is approximately 8.9ms wide. Since the increase in the ACF in and around the 1000th cell is due to noise variance on the process since fewer and fewer samples are added into the ACF.

Surface Fixed Autocorrelation
Flight/Run 401
Alt. 1.1 KFT
Up-Wind
Sea State 3

AUTOCORR

1.20
.80
.40
.00
-.40
-.80
-1.20
-1.60
-2.00
-2.40

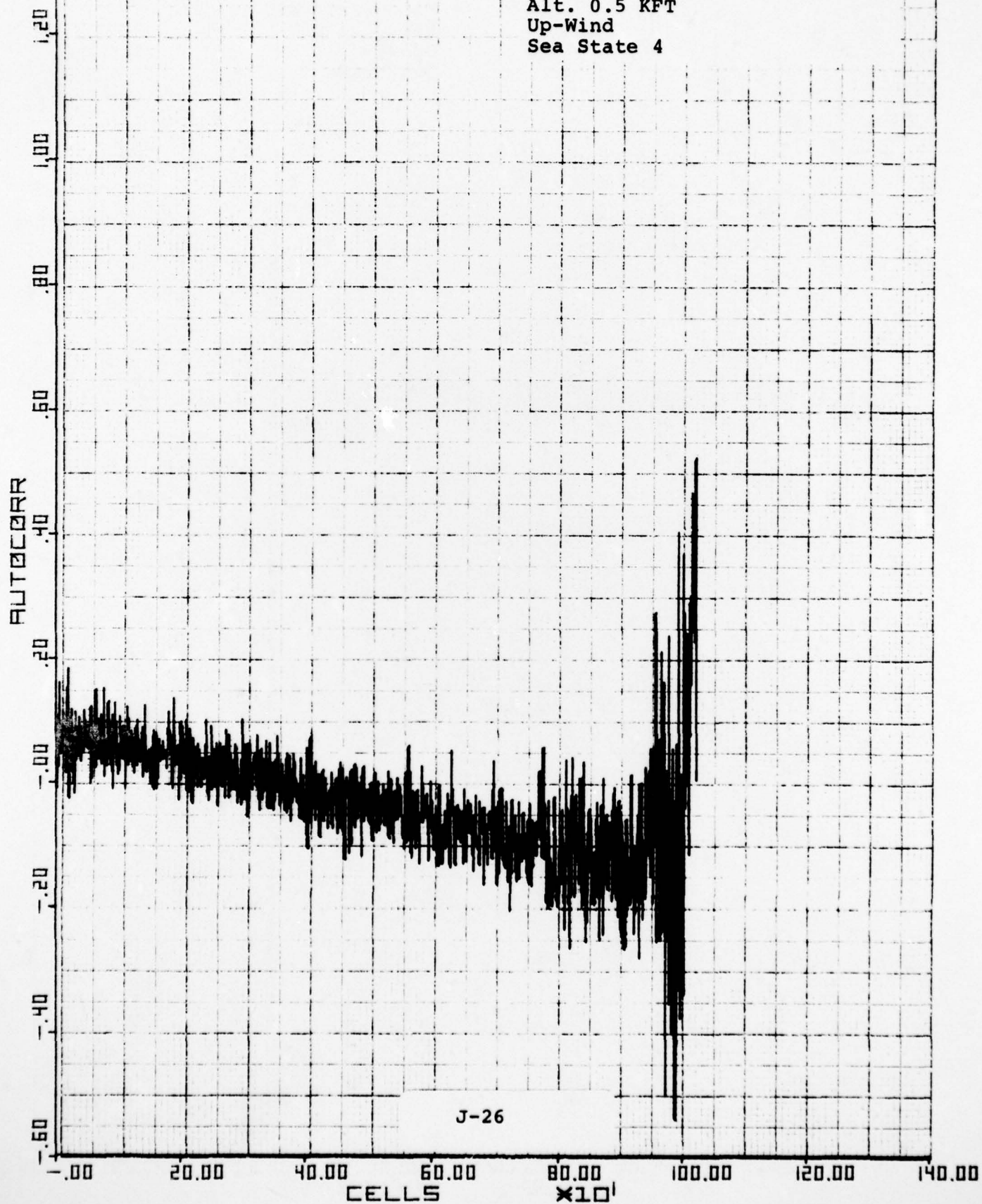
0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00

CELLS

$\times 10^1$

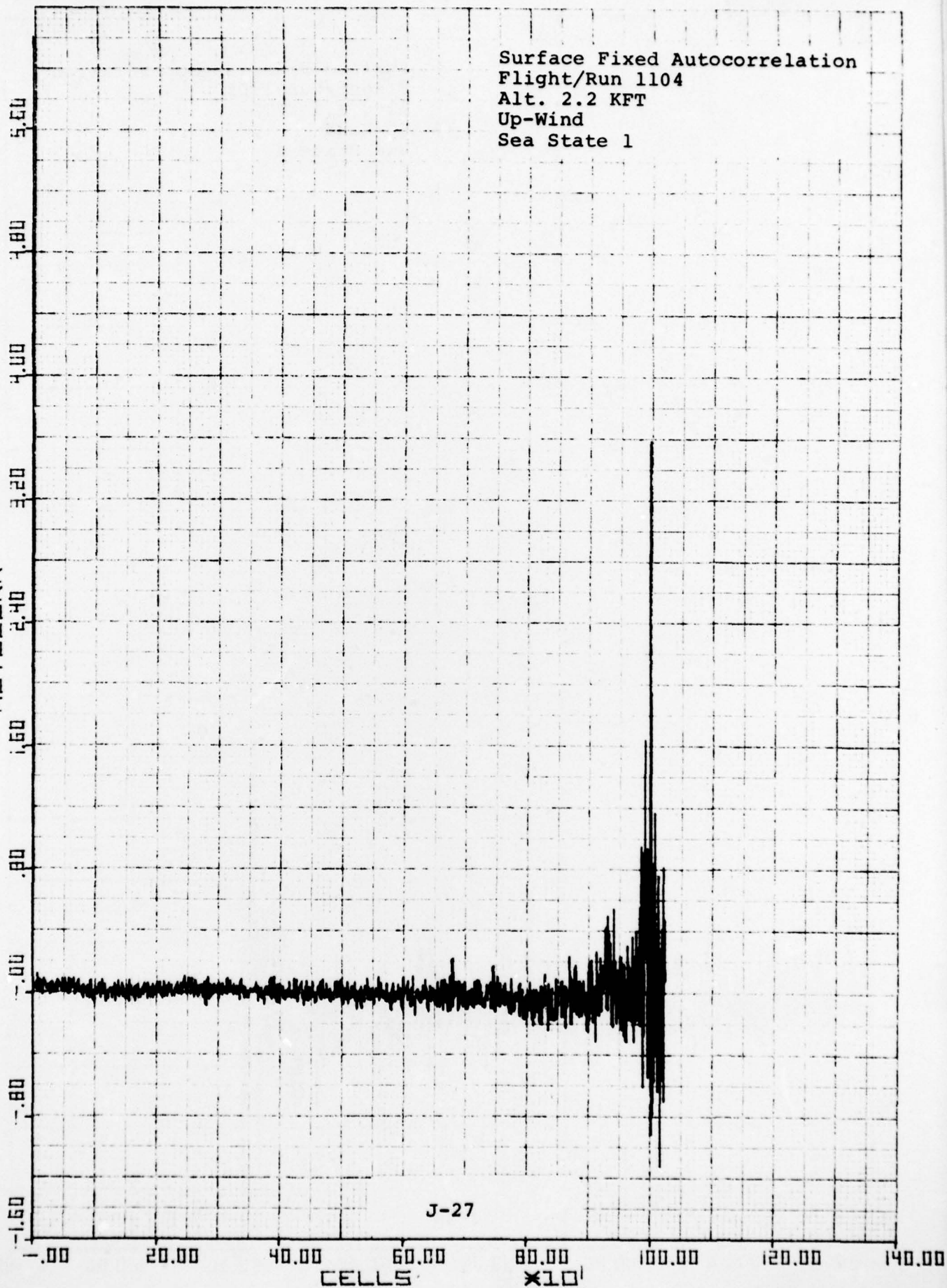
J-25

Surface Fixed Autocorrelation
Flight/Run 801
Alt. 0.5 KFT
Up-Wind
Sea State 4



Surface Fixed Autocorrelation
Flight/Run 1104
Alt. 2.2 KFT
Up-Wind
Sea State 1

AUTOCORR



J-27

Surface Fixed Autocorrelation
Flight/Run 1601
Alt. 1.1 KFT
Up-Wind
Sea State 4

AUTOCORR

1.40
1.20
1.00
.80
.60
.40
.20
-.20
-.40

J-28

0.00 20.00 40.00 60.00 80.00 100.00 120.00 140.00
CELLS $\times 10^1$